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EXPERIMENTS
IN
AGRICULTURE,
Made under the Direction of
The Right Honourable and Honourable
DUBLIN SOCIETY,
In the Year 1768.

To which is Added,

A Plan for a New-Constructed BARN.

[illegible] Dublin Soc[illegible]

By Mr. JOHN WYNN BAKER. K.
Experimenter in Agriculture to the SOCIETY.

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MDCCLXIX.

MVSEVM
BRITAN
NICVM

TO THE

RIGHT HONOURABLE and HONOURABLE

DUBLIN SOCIETY,

THIS

REPORT

OF

EXPERIMENTS in AGRICULTURE,

IS GRATEFULLY INSCRIBED,

By their Faithful,

And moſt Devoted,

Humble Servant,

JOHN WYNN BAKER.

LAUGHLINSTOWN,
February, 1769.

BRITISH MUSEUM

INTRODUCTION.

On the 25th Day of *July*, 1765,

The Right Honourable and Honourable

DUBLIN SOCIETY,

Were pleaſed to make the following ORDER, *viz.*

“THAT it be recommended to Mr. *Baker*, that with all convenient Speed, he will, among his Experiments in Agriculture, allot a Portion of Ground, (not leſs than one Acre) for the Culture of Wheat in Drills, Horſe-hoeing the Intervals; and that he alſo allot another Portion of Ground, the ſame Quantity) for the Culture of Wheat in broad Caſt; that theſe two Portions of Ground lie as contiguous to each other, and as much of the ſame ſort of Soil, as may be; that they be both ſown with the ſame Seed; and that Mr. *Baker* report his Obſervations, reſulting from this Experiment, to the Society.”

In my Report for the Year 1765, I informed the Society and the Publick, how far I had proceeded in this comparative Experiment, between the Drill and Common Huſbandry, in Obedience to the preceding Order.

In my Reports for the Year 1766, and 1767, I furniſhed an Account of the Produce of Corn and Straw, from each Method of Culture, in each Year; and alſo ſtated each Article of Expence, attending the two Methods of Culture, as it was incurred in the Practice, upon the given Quantity of Ground, in a clear and particular Manner.

Reſpecting the Treatment of the Acre of Ground, devoted to the Drill Huſbandry in this comparative Experiment, it will appear, by referring to my Report for the Year 1765, Page 48, that it was ſown for the firſt Crop of *Wheat*, * on the 5th of October, 1765, with *ſix Stone and three Pounds of Seed.* By the Report 1766, Page 17, it will appear, that it was ſown for the ſecond Crop of Wheat, on the 18th of October, 1766, with five Stone and two Pounds of Seed; and by the Report of the Year 1767, Page 9, it will appear that it was ſown for the third Crop of Wheat, on the 18th of October, 1767, with five Stone and two Pounds of Seed.

Reſpecting the Treatment of the Acre of Land which in this comparative Experiment, was devoted to the Common Huſbandry, the Reader will find, by referring to my Report for the Year 1765, Page 49, that it was ſown on the 5th of October, 1765, (the ſame Day on which the Drilled was ſown;) but that Half this Acre of Ground, was ſown under the Plough, and the other Half under the Harrow, * each half Acre being ſown with ten Stone of Seed.

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* The Reader who has looked over my former Reports, will recollect, that in the Year 1764, this Ground was under drilled Turneps; in 1765, under drilled Barley, and conſequently this firſt Crop of Wheat, was the *third* drilled Crop upon the ſame Ground.

By referring to the Report for the Year 1766, Page 12, and 13, it will appear when theſe Experiments were reaped, and what was the Produce of each diſtinctly.

In my Report for the Year 1767, Page 16, it will appear, that for the Crop of Oats, which followed the Wheat upon this Ground, that I ploughed Half of it in October, 1766, in order to aſcertain whether once or twice ploughing for Oats be moſt profitable, in which, I troubled the Society for their Senſe and Inſtructions, for Reaſons which will appear in my Report for the Year 1766, Page 16, and 17.

By this Treatment of the Experiment, we have already been informed of the Difference between once and twice ploughing for Oats; and with that Crop cloſed our comparative Experiment, ſo far as the Common Huſbandry could proceed, in a judicious Practice, without allowing intermiſſion for Fallow; and therefore, when the Oats come off, the Ground was devoted to Fallow; and was accordingly ploughed in October, 1767, for that Purpoſe.

It now remains for me to inform the Society and the Publick, of the Reſult of the Continuation of the Experiment on the Acre of Land, devoted to the Drill Culture, and its Produce.

And upon the cloſe of my Report, of this third Crop of Wheat, I ſhall furniſh the Publick, with the Objections which have ariſen in the Courſe of my Practice, to this Species of Culture.

As alſo, with ſome preſumptive Suppoſitions, for the Removal of them: preſumptive I call them, becauſe

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* Theſe two Methods of ſowing, were calculated to aſcertain whether ſowing Wheat under the Plough or Harrow be moſt advantageous, and the reſult will appear, by referring to my Report for the Year 1766.

nothing but Time and Experience, can afford accurate Information to Man; which confirms the Importance of making Experiments, for the Inſpection and Information of thoſe, who cannot ſpare Time or Money to make them, for the better Direction of their own Purſuits.

In the Courſe of this Report, I ſhall likewiſe inform the Society and the Publick; not only of the Reſult of ſome comparative Experiments in this way, upon a much more extenſive Scale; but alſo, of ſome comparative Experiments, between different Species of Wheat, ſown upon the ſame Ground.

And I hope ſuch Experiments, upon different Species of Turneps, and their Uſe to the Farmer, Grazier, or Dairy-man, as will not only ſhew the Value of that Plant, but which Kind are to be preferred.

EXPERIMENTS

IN

AGRICULTURE.

Comparative EXPERIMENTS on WHEAT, &c. between the DRILL and COMMON HUSBANDRY.

The Continuation of a Comparative Experiment, between the Drill and Common Huſbandry.

AS our Acre of Land, which, in this Experiment, was devoted to the Common Huſbandry, produced no Crop in the paſt Year, I need take no further Notice of it in this Report, than to ſay, that the next Crop it may produce, has a right I think, to ſtand charged with the Expence and Rent incurred, in making Fallow of it, and therefore, I ſhall not charge it in this comparative Experiment, for the paſt Year.

Hence, I have nothing to do in this Report, reſpecting this comparative Experiment, but to furniſh my Account of the Acre under Drills, for the paſt Year.

After this Acre of Ground (the drilled) had produced the Crop of Wheat in the Year 1767, it was ſown again with Wheat, on the 18th of October, in that Year, with five Stone and two Pounds of Seed, the Produce of which, is what I am now to give an Account of.

In my former Reports, I have ſo fully deſcribed the Manner, and different Seaſons, for performing the ſeveral Operations with the Hoe Plough and Cultivators, that I believe it is hardly neceſſary for me to enter ſo minutely into the Manner and Seaſons of performing them, as I have done heretofore; and therefore I ſhall in the Groſs, take the whole of the Expence of thoſe Operations, at what I have ſtated them before in my former Reports, when I come preſently to ſtate the Account of Profit and Loſs upon the Crop.

The Corn, after receiving the uſual Culture, ſtood until the 27th Day of Auguſt, when it was reaped, which took three Men a Day, at 14 Pence, conſequently the reaping Coſt three Shillings and ſix Pence.

The Produce, was only three Barrels and one Stone of Wheat, and of Straw only 16 Hundred and one Quarter.

Here we ſee a great Diminution in our Produce, when compared with that of the preceding Year, and by looking at our Produce, in the firſt Year of Wheat, in this Experiment, we ſhall find that our Produce has progreſſively decreaſed ſince our firſt Crop of Wheat; but before I proceed to make any Obſervations upon a ſucceſſion of Crops under this Culture, or offer the Objections which have ariſen to it, in the Courſe of my Practice, I ſhall ſtate the Account of the paſt Year; and reduce under one general Account, the Crops of the two Methods of Culture, for the Time in which this comparative Experiment has been depending; that upon the Cloſe, the Publick may perceive, how they ſtand in point of Profit, when compared with each other.

Dr.

Dr. One Acre of Wheat in Drills, as the Expence aroſe, in the 3d Year.

1767.		*l.*	*s.*	*d.*
Oct. 17.	To ploughing once, after the Crop of 1767.	0	10	4
18.	To Harrowing, with the Drill Harrows	0	0	4½
	To drilling the ſeed Corn	0	0	9
	To ſeed Wheat, 5 Stone, and 2 Pounds, at 25 Shillings *per* Barrel, ſo charged, becauſe the Crop of 1767, was valued at that Price	0	5	1½
1767 and 1768.	To the different Horſe Hoeing and Cultivating	0	7	7¾
Aug. 27.	To reaping	0	3	6
Sept. 29.	To one Year's Rent	0	18	0
	To traſhing 3 Barrels, 1 Stone at 8*d.*	0	2	0½
		2	7	9¼
	To clear Profit	2	0	8
		4	8	5¼

Thus the Account ſtands for the paſt Year: I ſhall now State a general Account, of Expence and Profit, between the two Species of Huſbandry, for the Time, in which this comparative Experiment has been depending, for the readier Information of the Reader.

Per Contra. *Cr.*

1768.		*l.*	*s.*	*d.*
Aug. 27.	By Produce of Wheat, 3 Barrels, 1 Stone at 25 Shillings — —	3	16	3
	By Straw 16 Hundred, 1 Quarter, at 9*d.* — — — —	0	12	2¼
		4	8	5¼

Dr. One Acre of Land, under drilled Wheat, for 3 Years.

		l.	s.	d.
1766.				
Sept. 29.	To the total Expence of that Year, See the Report for that Year, 1766, Page 20 —— ——	3	5	1¾
1767.				
Sept. 29.	To the total Expence of that Year, See the Report for the Year 1767, Page 12 —— ——	2	11	6¼
1768.				
Sept. 29.	To the total Expence of the Year 1768, See this Report, Page 11	2	7	9¼
		8	4	5¼
	To clear Profit in 3 Years *	17	4	6¼
		25	8	11½

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* This Sum amounts to 5 l. 14 s. 10 d. for each Year, which would be a very great Profit to the Farmer, could a Man bring all his Tillage to afford ſuch a Profit, but unleſs he can firſt prepare his Land ſo as to Produce a good Crop of Turneps or Cabbages, he cannot have ſuch Profits by Corn.

Per Contra. *Cr.*

		Wheat.			Straw.						
		B.	*S.*	*lb.*	*T.*	*C.*	*q.*	*lb.*	*l.*	*s.*	*d.*
1766.											
Sept. 29.	By the Produce of Wheat — See the Report of 1766. Page 12 —	7	11	5	1	19	1	22	12	16	7
1767.											
Sept. 29.	By the Produce of Wheat — See the Report for 1767. Page 13 —	5	12	7	1	9	2	27	8	2	11¼
1768.											
Sept. 19.	By the Produce of Wheat — See this Report, P. 12 -	3	1	0	0	16	1	0	4	8	5¼
		16	4	12	4	5	1	21	25	8	11½

The Acre of Land, devoted to the Common Huſbandry in this comparative Experiment, having been under Fallow during the paſt Year, conſequently produced no Crop, and therefore I ſhall State the Expence and Profits of the two firſt Years, in Order to compare the Profits of the two Methods of Culture.

Dr. One Acre of Land, under the Common Huſbandry.

		l.	s.	d.
1766. *Sept.* 29.	To the total Expence upon the Crop, in the Year 1766, See the Report of that Year, Page 22 — — —	4	1	8
1767. *Sept.* 29.	To the total Expence upon the Crop, in the Year 1767, See the Report of that Year, Page * 20	3	7	11½
1768.	To Rent and Expence for Fallow left upon the next Crop — —	0	0	0
		7	8	9½
	To clear Profit in 3 Years —	16	1	9
		23	10	6½

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* The Account ſtated in the Report 1767, is only for Half an Acre, this Account is for an Acre, as it muſt be doubled, as I have done.

For three Years. *Per Contra.* *Cr.*

1766.				
Sept. 29.	By Produce of Wheat, 10 Barrels, 18 Stone, 2 Pounds, Straw, 2 Tun, 6 Hundred, 1 Quarter, 2 Pounds. See the Report for 1766, Page 23 † — —	18	2	10
1767.				
Sept. 29.	By Produce of Oats, 13 Barrels, 5 Stone, and Straw, 1 Tun, 1 Hundred, 13 Quarters, 20 Pounds. See the Report 1767, Page 21 ‡ — — —	5	7	8½
		23	10	6½
1768.	Under Fallow —— ——	0	0	0
		23	10	6½

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† I have taken for this Credit, the Crop produced under the Plough, as being the greateſt Quantity.

‡ I have taken for this Credit, the Crop produced from once plowing.

From the two preceding Accounts, I ſhall now ſtate the Comparative one for three Years, in the advantageous Manner, which has always during the Courſe of this Comparative Experiment, been given to the common Huſbandry, and then examine the Compariſon, in another Manner.

	l.	*s.*	*d.*
The clear Profit ariſing from the Drill Culture, in three Years, appears to be	17	4	$6\frac{1}{4}$
The clear Profit ariſing from the common Huſbandry for the ſame time, appears to be — —	16	1	9
Superior Profit in favour of the Drill Culture —— —	1	2	$9\frac{1}{4}$

Thus we ſee, that in actual Practice, regard being had to the many Obſervations made, in the courſe of this Comparative Experiment for three Years; that the Drill Culture, has afforded a ſuperior Profit of only *1l. 2s.* $9\frac{1}{4}$*d.* in the Manner which the Account has been carried on. I own that in the Commencement of this Comparative Experiment, I had Expectations, that at the end of three Years, the Profit, even in the Manner I have ſtated the Account, would have been much greater in favour of the Drill Huſbandry, than we now find it to be. However, the Method which was firſt adopted in ſtating the Account, could not be departed from, becauſe that would have had the Complexion of Partiality; and as I had much rather have the character of Candour than Ingenuity, I have on the other Side, given the Anſwer to this important Queſtion to the World, as I have found it in the Event.

And although that Event turns out to be ſuch, as will not be ſufficiently inviting to every Tiller of Land to adopt the Drill Culture for Corn; yet, the great Advantage with which the common Huſbandry appears, in the Courſe of this comparative Experiment, I think muſt ſo far ſhew the Aid which the Drill Huſbandry may be of to the common, by univerſally adopting it in the Preparation for Corn, by firſt ſowing Turneps in Drills; ſince, in the original Preparation of the Ground upon which this comparative Experiment has been carried on, the Reader will recollect, that Turneps in Drills, was the firſt Crop *, and I have ſo frequently urged the ſowing them in that way, as the moſt effectual Method of preparing Land for any other Purpoſe whatſoever, that I need not enlarge upon that practice; particularly, as I ſhall have Occaſion to ſay ſomething upon that Subject, in the Courſe of this Report.

I ſhall not further recapitulate the many Advantages which have been given to the common Huſbandry, in the Courſe of this comparative Experiment, but refer thoſe who look over the Account of my Labours, really for Information, to the occaſional Obſervations in my former Reports; and therefore I ſhall now proceed to make ſome general ones, for the Information of the Reader.

General Obſervations, upon this Comparative Experiment.

I. *Obſervation.*

Upon the original Commencement of this comparative Experiment, it may be remembered, that the Land for both Methods of Culture, had been two Seaſons under Drilled Crops, (namely, Turnips and Barley.)

II. *Obſervation.*

Ever ſince, the Experiment has gone on regularly, and in three Years, we have ſeen, that the Acre devoted to the Drill Culture, has produced 16 Barrels, 4 Stone, and 12 pounds of Wheat; and of Straw, 4 Tuns, 5 Hundred, 1 Quarter, and 21 pounds.

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[*] Which will appear by referring to my Report for the Year 1764.

III. *Obſervation.*

The common Huſbandry has produced during that Time, of Wheat, 10 Barrels, 14 Stone, 4 Pounds[*], of Oats, 14 Barrels, 6 Stone, 7 Pounds[†], and of Straw of both kinds, 3 Tuns, 10 Hundred, 3 Quarters, and 23 Pounds.

IV. *Obſervation.*

In this View of the Compariſon, we perceive the Drill Huſbandry has the Advantage alſo, tho' not equal to what I flattered myſelf with, neither does that Superiority, come up to my preſumptive Calculations.

V. *Obſervation.*

Now let us examine the Matter, in another Point of View, and we ſhall find the Drill Culture, to have the Advantage, in a greater Degree, than appears upon the face of our comparative Account ——— For ſuppoſe we value the Crops of Wheat, produced from each Method of Culture, at the Medium Price of Wheat for three Years paſt; in that Caſe, the Quantity produced by the Drill, the Price being a Penny a Pound, will amount, with the Straw, at 9*d.* an Hundred, to 22*l.* 13*ſ.* 1*d.* out of which, we are to deduct the Expence, Page 15, 8*l.* 4*ſ.* 5¼*d.* and then the Profit will appear to be only 14*l.* 8*ſ.* 7¾*d.* the Produce of Wheat from the common Huſbandry being valued at the ſame Price, the Oats at ſix Shillings, and the Straw at 9*d.* an Hundred, will amount to 19*l.* 10*ſ.* 1*d.* out of which we are to deduct the Expence, which will leave the clear Profit, 12*l.* 1*ſ.* 3½*d.* this Sum being compared with the above Profit ariſing from the Drill Method, ſhews the latter hath the Superiority by 2*l.* 7*s.* 3¾*d.* This is very near ſixteen Shillings per Annum, for the Acre of

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[*] In this Amount, I include the Produce under the Plow and Harrow, as appears in the Report of 1766.

[†] In this Amount, I take the compleat Produce ariſing upon the Acre, from both the Methods of Culture uſed.

Land, over and above the Profits of the common Huſbandry, well executed, as the Crops certainly prove: An advantage, which without any other, is certainly inviting, becauſe, now we proceed not upon Suppoſition, but by Experiments, which have been regularly carried on, and which have been ſeen by thouſands of People.

VI. *Obſervation.*

Altho' the ſuperior Profit, which I have juſt ſhewn may be Inviting, yet the Crop of the paſt Year, has been ſo much leſs, than what we might reaſonably have expected, that I own it ſeems improbable that a ſucceſſion of Crops of Corn, upon the ſame Ground, for a *long ſeries of Years*, can be ſo profitable, as it might be, by mixing the two Species of Huſbandry, in the Manner I ſhall deſcribe hereafter.

VII. *Obſervation.*

Much might be charged, reſpecting the Diminution of our Crop, to the Severity of the Seaſon, but the whole cannot, as I ſhall now proceed to ſhew.

Further Obſervations, by way of Objections, to a long Succeſſion of Crops of Corn, under the Drill Culture, founded upon my own Experience, in the Courſe of which, ſome Objection will appear to the Manner in which I have practiſed it. Upon the Alteration of that I ſhall ſuſpend my Judgment, of the Merit or Demerit of this Huſbandry, under a long Succeſſion of Crops of Corn.

I expect when the prejudiced Reader comes to this Page, he will exult at his own Sagacity, that he ſhould have foretold, that the Drill Huſbandry "will never anſwer," for that in general is the deciſive Argument of the inexperienced. But that is what my practical Experience will not yet allow me to ſay, and I believe never will, becauſe I am aſſured, for ſome Articles in the Farmers Department, it is preferable to the common. And by ſuch Readers, I ſhall be allowed to ſay, that I have not found the hacknied Objections, which I have ſo frequently heard of, to happen in the Courſe of my Practice, except that, which from want of Care in the late ſowing, ariſes from the Havock which Birds will make upon the Corn, when coming up: this Objection I own, I have found valid. But Impracticability, the Corn lodging, and all thoſe common-place Objections, I have found to have been the mere Inventions of Imagination, and not to have ariſen from Experience. Sorry I am, that I can offer Objections, of a more ſolid Nature.

That the Corn will not lodge, I do not aſſert; mine has lodged by ſtrong Winds, and heavy Rains; but in two or three dry Days, it will be erect again, even where the Corn is ſtrong and heavy. A Circumſtance, which ſeldom happens to Wheat when ſown in the common way, for when that is down, it ſeldom riſes again, though I have ſometimes ſeen even that riſe.

The Objections which I have Experienced, are as follows.

In my former Papers, and frequently in Converſation, I have mentioned, that the Reaſon why the Drill Corn does not ripen quite ſo ſoon as that ſown in the common Way, is, that the Corn is fed a longer Time than it can in the common Way, becauſe the Roots have ſo much Room to extend themſelves in ſearch of Food, and that the Roots are aided in that Work, by the Culture of the Intervals.

Hence, I find ariſes my firſt Objection, to the Drill Culture for Wheat, in a wet Seaſon, or on poor, or cold Grounds *.

I. *Ob-*

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* Lands are cold from various Cauſes: but contrary to the received Opinion, that Land lying upon Quarries, and particularly

I. *Objection.*

The Formation of the Grain is not early enough, from the Coldneſs of a wet Seaſon on poor or impoveriſhed Grounds, particularly in a Country, where the Harveſt is generally late, for want of a warmer Sun, than we have in Ireland, and therefore the long Nights come on, which are damp, even if Rain does not fall; and if the Sun happens to be clouded, the Corn remains wet all the ſucceeding Day, particularly, if it be ſtrong and thick.

For want of Warmth, Vegitation ceaſes, and the Grain remains ſhrivelled, and in a State of Poverty; and when threſhed, is what the Bakers call a flinty Grain, which yields leſs Flour than a full Grain. This Effect indeed, is not peculiar to the Drill Culture, becauſe it will alſo attend Wheat, when ſown in the common Way in a greater Degree; if the Corn be ſtrong, as is generally the Caſe in a wet Seaſon. And wet Seaſons are Productive of Smut †, Blight ‡, and Ruſt ‖, as has appeared,

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ticularly Lime-ſtone Quarries, is from thence, warmer, than other Soils; I find it quite otherwiſe, and a Moment's Reflection, I think, will convince every reaſonable Man thereof; for upon examining the Matter, we find a Lime-ſtone to be a tolerable good Barometer. Upon the Approach of wet Weather, the Lime-ſtone always acquires a Dampneſs, ſimilar to that of Salt or Rock Salt, when Stones which are not capable of making Lime, will remain dry. In wet Weather, Lime-ſtone attracts great Moiſture, and will be intenſely cold; this cannot be wholeſome to Plants or Vegitation, in wet cold Weather; particularly at a Seaſon, when the Crops of the Earth require dry warm Weather.

† Smut is a Diſeaſe, which all our white Corns are liable to; the Ears of Corn are abortive, containing, inſtead of Flour, in the Skin of the Grain, a black Powder, like Ivory or Lamp-black; the Skin of the Grain is filled with this Powder. The Farmer diſtinguiſhes theſe abortive Grains (if I may ſo call them) from ſound Grains, by the Name of *Balls*.

‡ Blight is quite another Diſeaſe, though the Farmer frequently calls Smut by this Name. But Blight produces abortive Ears of Corn, without any Smut. It is not ſo common as Smut,

peared, in the Courſe of my Experiments and Obſervations, but I ſhall have Occaſion to take Notice of that in another Place, and therefore diſmiſs it for the preſent.

II. *Objection.*

I find, when four or five Crops have been taken off the Ground, that the Part of the Ridges upon which the Corn ſtands, (particularly, where the Land in its *own Nature*, be poor,) throws up ſuch a Quantity of offenſive Weeds, Poppies, Hog Fennel, &c. particularly in a wet Seaſon, that no Labour can eradicate them, but Fallow and Turneps. Horſe Hoeing the Intervals, ſeems to give them Vigour; and if the Corn be ſtrong, ſo that the Hoe Plough cannot operate, after June, the like Weeds, riſe wonderfully in the Intervals. Perhaps upon Land, naturally rich, this Effect might not happen; at leaſt, before a greater Number of Crops have been taken off.

III. *Objection.*

To the preceeding Objection, it may not be improperly placed, for me here to obſerve, by way of a third Objection, that in the Courſe of my Practice, I have made my Ridges only five Feet broad. I expect, if they were made ſix Feet broad, that from there being more Room to cultivate between the Rows of Corn, the Inſtruments might be introduced more frequently, and thereby greatly contribute to the Deſtruction of the Weeds; for it has been after the Culture has been finiſhed, that they have ſhot up, and formed their Seed, which I conceive to be productive of them in the ſucceeding Year.

Smut, neither is it ſo injurious, becauſe by that, we only loſe the Profit which the Ears might have produced, whereas Smut diſcolours the ſound Grain, in threſhing, and renders it unfit for Market.

‖ Ruſt is a diſtinct Diſeaſe, from the other two Kinds, and is what the Farmers in general call Mildew. See my Report for the Year 1764, P. 59.

IV. *Objection.*

My fourth Objection to a long Succeſſion of Crops of Corn, ariſes in another Circumſtance, though probably it is produced from the ſame Cauſe: namely, that, of the Ridges having been two narrow.

The Crop which I have already given an Account of, in Page 9, 10, and 11, we have ſeen was a very poor one, and the Appearance it made from Chriſtmas 1767, to the Harveſt of 1768, diſturbed me much. I knew a ſufficient Quantity of Seed had been allowed, and yet after Chriſtmas, the Corn appeared to be very thin. For ſome Time I was totally at a Loſs, how to account for this Appearance, but upon opening the Ground in ſome few Places with a little cautious Care, the Cauſe manifeſtly appeared.

For I found, that the Stubble of the preceding Crop, which interfered with the Coulters of the Drill Plough in its Paſſage, when ſowing the Seed for the 3d Crop of Wheat, cauſed the Ground to remain hollow in many Places about the Seed ſown; and although the Corn might come up ever ſo well in Appearance, yet when the Winter Rains come on, theſe Hollows are ſo many Lodgments for Water; which preſently periſh the Plants. Hence ariſes a great Dimunition of our Crop.

Six feet Ridges may probably remove this Objection alſo, becauſe in ploughing the Ground for a ſucceeding Crop, the Stubble of the preceding one will not be ſo apt to approach the middle of the new made Ridge, as when the Culture is carried on with narrower Ridges.

V. *Objection.*

And laſtly, I ſhall obſerve, that it ſeems to have been the Opinion of many Writers, who have wrote upon this Huſbandry, that the conſtant Production of Crops, without Intermiſſion, does not impoveriſh the Ground; but that, on the contrary, the Culture of the Intervals improves it. This would be a very inviting Conſideration indeed, did practical Experience confirm it *. But I find this not to be the Caſe, for certain it is, that the capability of the Ground to feed Plants, is every Year leſs, after it has produced a Crop of Turneps; which the Reader will pleaſe to recollect, was my Original Preparation; is that which I formerly recommended, and do ſtill recommend.

Animadverſions upon ſome of the foregoing Obſervations and Objections, interſperſed with Directions, for mixing the Drill and Common Huſbandry; by which it is apprehended larger Profits may be made, than by adhering to either diſtinctly, by way of Concluſion, upon the Cloſe of this comparative Experiment, between the two Species of Culture.

In my 4th Obſervation, the Advantage ariſing from the Drill Huſbandry is " not equal to what I flattered " myſelf with; neither does that Superiority come up to " my preſumptive Calculations."

I ſhall hope that the candid will not condemn me on that Account, ſince it is impoſſible that human Foreſight can pronounce, what can or will be the Effect of Operations upon the Earth, or what will be the Produce; and therefore it is, that Experiments are attempted, accurately to inform Mankind, that they may thereby be taught to proceed with the greater Safety.

My 5th Obſervation remarks upon the Diminution of our Crop in the paſt Year, and concludes with obſerving,

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* I own, before my Repetition of Crops, upon the ſame Ground, I was very willing to believe this, becauſe the Reaſoning which has been made uſe of, ſtrikes the attentive Reader with great Force.

ving, " that it ſeems improbable, that a Succeſſion of " Crops of Corn, upon the ſame Ground, for a long " Series of Years, can be ſo profitable, as it might by " mixing the two Species of Huſbandry."

Hence, ſome Readers may conceive a total Condemnation of the Drill Culture to be my Sentiments; but I mean not to be ſo underſtood by any Means; for it will at leſt afford *two* material Benefits to the Culture and Increaſe of Wheat, as I ſhall ſhew preſently.

As to my firſt *Objection*, though it ſtands very ſtrongly againſt the Drill Culture upon *poor* Ground, yet it is no leſs ſtrong againſt the Common upon the like Land. Or in the like Seaſons.

In my 2d *Objection*, I have ſaid, " that no Labour can " eradicate the Weeds, but Fallow and Turneps." I ſhall hardly be underſtood, to mean, that it is impoſſible to remove the Weeds, but what I mean is, that no Expence, which the Farmer ſhould embark in will do it; for if the Expence in any Caſe, be greater than the Profit, the Conſequence muſt be injurious to him.

In the Courſe of my Experiments I have therefore, always endeavoured to confine myſelf to ſuch Expence, as the Subject would admit of; where more has been required, I conſider the Attempt abortive, or at leaſt unprofitable.

The Reader will recollect, that in this my ſecond Objection, theſe Weeds have been troubleſome in the continued *Succeſſion* of Crops, but in the firſt Crop of Wheat, there were very few Weeds, and that was our third Crop *.

My 4th Objection I fear will remain valid, under a long Succeſſion of Crops, on five feet Ridges: whether their being made ſix Feet wide will remove the Objections Time only can ſhew.

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* Firſt Turneps, then Barley, then Wheat.

I am aware, that it may be urged, that the Stubble may be removed, which I admit, but altho' that may be done to Advantage, in a ſmall Quantity of Ground, yet it would be a tedious and expenſive Buſineſs to clear a large Quantity; beſides which, it would be robbing the Ground of ſo much Manure as the Stubble would make.

My 5th *Objection* I am afraid will be found inconteſtibly true in Practice, with five feet Ridges, how far thoſe of ſix Feet may remove, I ſhall wait, until my Experience ſhall inform me.

The Cauſes of the Diminution in our Crop of the paſt Year, I have already ſhewn, under the 7th Obſervation, and the Head of Objections.

We have ſeen, that our firſt Crop of drilled Wheat was a good one, and our ſecond, tho' not ſo good, was yet not a contemptible Crop.

After the firſt Crop, the Ground was left in a good State, as I have mentioned in my Report for the Year 1766. And therefore, I am very inclinable to believe, that if the Cultivator ſows his drilled Corn, upon Ridges five feet broad, that it will be moſt profitable to ſow his ſecond Crop of Wheat, under the Harrow, after once or twice ploughing the Ground, in the ordinary Courſe of Buſineſs. For this Purpoſe the Ground will be in fine Condition, particularly if the firſt Crop has been Turneps, by way of Preparation.

This Crop of Wheat may be followed by Spring Corn, in which, after it is up, Clover ſhould be Sown. This I recommend to be paſtured for three Summers *. At the End of the third Summer, I ſhould wiſh a Month's Growth of the Clover to be left ſtanding, and in September plough up the Clover Lay†, in broad Ridges, and ſow Wheat under the Harrow‡. That may be ſucceeded with ſpring Corn: and then Fallow for drilled Wheat, or rather Turneps §, which is to be followed by the ſame ſucceſſion of Crops.

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* If the Cultivator obſerves any Docks riſing in his Clover, in the Spring of either of thoſe Summers, let him have them carefully taken up by the Roots and burned, or otherwiſe effectually deſtroyed.

Hence we ſee, that the drill Culture in the ſetting out, at leaſt admits of two Crops of Wheat in Succeſſion, which will be good ones, provided the Seaſons be favorable for that Corn.

A Crop of Spring Corn, three Crops of Clover, a Crop of Wheat, and a Crop of Spring Corn after it.

So that from one Preparation of the Ground, in this Courſe of Tillage, we might have three Crops of Wheat, three of Spring Corn, three of Clover, and one of Turneps, three of which Crops will be in the Drill way.

Thus ten Years will be conſumed, which affords ten profitable Crops, whereas in the common courſe of Tillage, only ſix Crops can be obtained in nine Years, every third Year being conſumed in Fallow, abſtracted from the great Expence which attends the labouring Fallow.

Another Advantage will ariſe in the ſuperior Quality of the drilled Corn, in the firſt Crop for Seed, which will always be better and cleaner Corn, than the common Huſbandry can afford upon the ſame Ground in the ſame Seaſon, particularly if the firſt Preparation of the Ground ſhall have been for Turneps.

I am not unmindful that it may be objected; that it will be impoſſible to find Manure to prepare the Ground in the ſetting out, for Turneps, in the Manner I re-

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† This Growth of Clover will not be a bad Subſtitute for dreſſing the Ground with Manure.

‡ I have ſeldom had or ſeen better crops of Wheat by Fallow, than I have had and ſeen in England from this Method.

§ For this Purpoſe, the Land is to be manured properly.

I recommend; I admit, if no more Attention can be excited in the Farmer to the making Manure, than is now generally given, it will not be much Ground that he can Manure; but if he will attend to the Methods of accumulating of it, in the Manner hereafter recommended, he will be enabled to cover a great Quantity of Ground; and if he will conſider, that ten Acres of Land, thus improved, will produce him more Corn than twenty Acres can in his preſent Practice, and conſequently, that the Labor is leſs by half; ſurely he will perceive that his Profits muſt be greater *.

But where it may happen, that the Courſe of Tillage which a Man may be in, in Point of Quantity of Ground, ſhall, in the Commencement of the Syſtem or Courſe of Tillage, which I now offer to his Conſideration, be more than he can prepare for Turneps, as in all Probability it may; in that Caſe, he can, after well Manufacturing his Fallow, commence this Scheme of Tillage, by firſt drilling his Wheat, and then proceed with the other Crops, as I have already mentioned.

But where the Cultivator may not chooſe to have his firſt Crop in the Drill way, he may proceed with the like Succeſſion of Crops, after fallowing the Land for the firſt Crop of Wheat, and if poſſible manure it alſo. But in this Caſe, he muſt remain ſatisfied with one Crop of Wheat in the Beginning, inſtead of two.

Either the Drill and common Huſbandry thus united, or even the common alone, I wiſh to ſee introduced amongſt the Farmers of Ireland; becauſe they will thereby have greater Productions of Corn, with much leſs Labour and Expence, than they can have from their preſent Practice.

And

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* Beſides, Manures abound ſo much, in almoſt every Part of Ireland, that few Occupiers of Land, need to be at a loſs, for there are few Farms circumſtanced as mine is in that reſpect, for I have no kind, but what I can acquire by Care and Attention.

And for their ſatisfactory Information and Inſpection, I ſhall prepare for a Set of Experiments, in the following Manner, if it ſhall be the Pleaſure of the Society, that I ſhould do ſo.

The two Acres of Ground, which has been now for five Years, under the Comparative Experiments already related with the Remainder of the Field, which has alſo been under Experiments, I have now thrown under Winter Fallow. I intend it for the Purpoſe of Turneps, Cabbages, and Turnep Cabbages, in order for Experiments, at the ſame Time, that I ſhall be preparing it for the mixed Huſbandry, which I have juſt propoſed.

After theſe, I ſhall drill it with Barley, and then divide it into diſtinct Quantities, and begin with ſowing Wheat in Drills, Wheat in the common way, and ſo carry on a Set of Experiments entirely under the common Huſbandry, and another Set by mixing the Drill and common Huſbandry, and ſo proceed with the whole Proceſs, in each Method comparatively, furniſhing Annually an accurate Account of Profit and Loſs.

And as theſe Comparative Experiments proceed, others will come on in Succeſſion, in a more extenſive way, ſo that I ſoon promiſe myſelf the Pleaſure of having ſuch a Chain of Experiments, as to be able to exhibit to the Inſpection of the Publick, Variety of Things in the ſame Seaſon.

And in my further Practice of the drill Culture alone, I intend to introduce five and ſix feet Ridges, in Oppoſition to each other, by which, in a Succeſſion of Crops, we ſhall be informed, whether the Obſtruction by the Stubble, as mentioned in my fourth Objection, to a long Succeſſion of Crops will remain valid.

Comparative

Comparative Experiments, in the Culture of Wheat, between the Drill and common Huſbandry, upon a much larger Scale, than the preceding Experiments.

My former Comparative Experiments on Wheat, have been but ſmall, in Compariſon of thoſe which I am now to give an Account of; and therefore it might be imagined, that to extend the drill Culture, upon a large Scale would be impracticable.

At leaſt to remove ſuch Apprehenſion, I conſidered it as incumbent upon me, to undertake a more extenſive Culture by way of Experiment; becauſe the exhibiting large Fields of any particular Species of Huſbandry or Plant, will be much more ſatisfactory and informing to the Publick, than ſmaller Experiments can poſſibly be; and as mine upon Wheat in the paſt Year, have been in a large way; I did therefore invite all Degrees of Men, by publick Advertiſement, to view and examine them; and indeed the Number who reſorted to my Farm, in Conſequence thereof, during the paſt Summer, was not a little pleaſing to me; particularly from the Approbation which Gentlemen expreſſed, and the Admiration of the Vulgar.

I am now to give ſome Account of this Set of Experiments; the Soil, the Preparation that it received, the Kind of Wheat it was ſown with, the Treatment of the Part under the Drilled Corn, and the Produce from each Method of Culture; interſperſed with Obſervations upon the Species of Corn, the Seaſon, and its Conſequences.

This Field, contains twenty Plantation Acres, which in October 1766, I broke for Fallow, after it had produced a Crop of Oats, and without particularizing the Time in which it received the different Ploughings, it will be ſufficient for me to ſay, that in the Preparation of the Fallow, the whole Field was ploughed five Times, and harrowed accordingly; inſomuch, that when it came to be ſown, it was really a well manufactur'd Fallow.

The Field has been conſtantly in a courſe of Tillage, as long as the oldeſt Workman in the Neighbourhood can remember; I myſelf have now had it under a common courſe of Tillage for ſix Years, during which Time it has had no Manure, neither can I diſcover any Man in the Neighbourhood, who can remember its ever having any: nor did I uſe any kind of Manure to any part of the Ground, upon my devoting this Field to the ſervice of the Publick.

The Soil is ſhallow, inclineable to a ſtiff hazle coloured Loam, with Abundance of ſmall flattiſh Lime-Stones in it, and lies upon a Lime-Stone Quarry, which in general is pretty near the Surface.

Ten Plantation Acres of this Field, I devoted to the common Huſbandry, and the remaining ten Acres to the drill culture, in order to exhibit to the inſpection of the Publick, an extenſive comparative Experiment in that way.

Well knowing the uncertainty of the Weather for ſowing Wheat in Ireland, by woeful Experience, I prepared to ſow this whole Field pretty early, and the two Methods, as much together as might be.

For on the 26th. of September 1767, I began to ſow the ten Acres in the common way, and finiſhed on the 1ſt. of October.

The ten Acres devoted to the drill Huſbandry, was Sown on the 28, 29, and 30th. of September*.

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* It may not be improper to inform the Reader, that this was ſown by a Man who had never held the drill Plough before; namely my Clerk, who tendered his Service, as my principal Ploughman was lame: I was willing to gratify the young Man, and he executed his undertaking very Compleatly, after going over two or three Ridges.

The ten Acres under the common Huſbandry, was allowed ten Barrels of Seed, and that under the Drill, took 53 Stone, which is two Barrels 13 Stone.

The Species of Wheat, with which I ſowed this 20 Acres of Land, was the *Blue Cone*, commonly known in Ireland, by the name of Turkey Wheat.

I ſhall have occaſion, to ſay ſomething hereafter, reſpecting this particular kind of Corn, and therefore, in this place, it will not be neceſſary for me to ſay more.

The Corn in both the Experiments came up very well, and made a very fine Appearance all the Winter.

The ten Acres of drilled Corn, received the uſual Hoings and Cultivations, at the proper Seaſons, in the manner deſcribed in my former Reports.

From the Spring, to the latter end of June, this whole Field of Corn, made as promiſing an appearance, as ever I ſaw in any Field in my Life; and the many Gentlemen and Farmers who came to ſee it agreed in the ſame Sentiments; for the Corn was ſtrong, thick and healthy; and in its Complexion, gave as ſtrong a Teſtimony of what may be done by the power of good Tillage, as could be ſeen, in ſo much, that the Crop at this Time, was valued at a great Sum of Money.

But the whole Field met with a Fatality, which no human Power could guard againſt; for on the 25th. of June we had immoderate Rain, and from that time, to the beginning of Auguſt, there were few dry Days, and ſcarce any which were not cloudy and hazy, attended with frequent Storms of Cold Wind.

This prevented the Corn ripening kindly, and brought upon it an infinite deal of Smut, in ſo much, that the Corn is ſcarcely ſaleable at a low Price.

What contributed not a little to this Diſeaſe, I do conceive was, that from the long continued Rain, cold Winds and inſufficient Sunſhine, the Corn was ſcarcely ever dry, from the 25th. of June, to the Approach of Harveſt.

And I cannot, but be very inclinable to attribute the injury of the Smut, to a Diſpoſition in this particular Corn to attend that Diſeaſe, on account of the extraordinary largneſs of the Ears, for thereby it retains the Moiſture, which I believe is productive of the Diſeaſe.

And what ſeems to corroborate this Apprehenſion is, that amongſt the Seed, there happened to be a few Grains of red and white Wheat, * which grew amongſt the Cone; and although both theſe kinds were greatly injured in point of Quality, yet I could find very few Ears which were ſmutted.

Hence I think, the cone Wheat is more liable to this Diſeaſe, than either of the other kinds, and what I ſhall have to ſay hereafter, when I come to ſpeak of another ſet of Experiments in another Field, will ſeem to confirm it.

The ten Acres under the common Huſbandry, was began to be reaped on the 15th. of Auguſt, and was finiſhed on the 18th. And the ten Acres under Drills was reaped on the 20th, 22d, and 23d.

From the great bulk of Corn and Straw, which theſe Experiments afforded, I was under an indiſpenſible Neceſſity, of Stacking both the Experiments in the Field, according to the Cuſtom of the Country, as I had not Barns to take them into; and after that I was obliged to make Ricks of them in my Haggard.

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* From the circumſtance of my having at the time of Traſhing the Seed, only one Barn, which renders it very difficult to have Seed free from Mixture, but that will I hope, not happen again, as I have built another large Barn.

The ten Acres under the common Huſbandry, afforded ten large Field Stacks, and the ten Acres under the Drilled, afforded twelve large Field Stacks.

But ſtill, upon the Corn being Ricked in the Haggard, a more accurate method was taken, for the Sheaves, were counted, and the common Huſbandry afforded 512 Barts, 7 Sheaves, and the Drilled 503 Barts, 4 Sheaves*.

When the Corn of theſe two Experiments came to be threſhed, the drilled afforded 41 Barrels. 17 Stone, 7 pounds of Wheat, and the common Huſbandry 40 Barrels, 12 Stone, and 6 Pounds.

Not half the Crop which was expected, for before the wet Weather came on, it was imagined this Field would have produced near 200 Barrels of Wheat; ſuch was the promiſing Appearance it made.

But in order to form ſome kind of Judgment, of what might have been expected, I undertook to ſeparate the ſmutted Ears of a Sheaf, from the ſounder Ears, and of the ſmutted or abortive Ears, there were 215, which contained nothing but the black Powder of Smut; and and of the ſounder Ears 524; ſo that we ſee by this Misfortune, two fifths of our Ears of Corn were deſtroyed.

But there is yet another great diminution of our Crop, even in what remained ſound; for of this Corn, it takes 753 Grains to weigh an Ounce, Averdupoiſe; whereas, if the Seaſon had been favourable, I do not believe it would have taken near 600 Grains to weigh an Ounce, becauſe the Grains of the cone Wheat are remarkably large, when they fill properly.

But ſuppoſe the Grain had filled, and even 600 Grains had been required to weigh an Ounce; in that caſe we have loſt upon our produce of Corn, three fifteenths.

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* A Bart, is 20 Sheaves.

Now if we add to the actual Produce which we obtained, two fifths for the ſmutty Ears, that would augment our Produce upon the ten Acres of drilled Corn, to 58 Barrels, 12 Stone, 7 pounds; and when we add to that, three fifteenths for the inſufficient quality of the Grain, amounting to 11 Barrels, 14 Stone, and 7 pounds; in that caſe, our Produce upon the ten drilled Acres, would have been 70 Barrels, and 7 Stone; and in a greater proportion I apprchend, would have been that of the common Huſbandry: but from the extraordinary Stoutneſs of this Crop, it ſuffered more by the Severity of the Seaſon already mentioned, than the drilled Corn, and therefore I conceive was ſomething leſs than the drilled; and not, I really believe, that the drill Huſbandry will produce moſt, where the Ground ſhall be equally prepared, for I think my former Experiments, have ſhewn the contrary.

Many were my Motives, for ſowing this particular ſpecies of Wheat in theſe large comparative Experiments. When the Crop ſucceeds, it will produce more than any other Wheat that I know of, for the Ears are larger, as are the Grains, they ſtand in the Ear much cloſer together than any other Corn, and contain a greater Number, inſomuch, that it is no uncommon thing, for an Ear to contain an hundred Grains, I have had them to produce 126, from an Ear.

The Corn having Beards upon it, like Bere or Barley, is ſome Defence againſt Sparrows lodging upon it, for when they pitch upon the Corn, whilſt the Ears are erect the Beards prick them in the Breaſt, and cauſe them to go off again: however, I would not be underſtood to mean, that this is a total Defence, for when the Ears ripen, they decline, when I have ſtood and ſeen the Sparrows commodiouſly lodge themſelves upon the heal of the Ear, thereby avoiding the Points of the Beards, (as a Man would the Point of a Sword) thus ſituated, they firſt proceed to pull off the Beards, and then devour the Grain. So ſegacious, are thoſe Enemies of the Farmer.

Altho' the Circumſtances already mentioned, are inviting, to the Culture of this particular Species of Wheat; yet I have now experienced ſome Objections to it, which I think more than counter-Balance thoſe promiſing Advantages.

We have found, that it will not ripen kindly in a Wet Seaſon, if it be thick and ſtrong; and that, in thoſe Caſes, it is ſuſceptible, of contracting the Diſeaſe of Smut; which not only greatly diminiſhes the Crop, but diſcolours the ſound Corn.

True it is, theſe are Objections that are governed much, by the good or bad Seaſon, and therefore, in ſome Meaſure, are accidental; hence this Species of Corn ſhould not be wholly rejected on that Account.

But there ſeems to be yet another capital Objection to it; namely, that it does not afford ſo much Flour, as either the red or white Wheat; but from the general Poorneſs of every Kind of Wheat from the Crops of the paſt Year, I could not examine this particular with that Accuracy, which I intended; becauſe I think the different Species of Corn for ſuch an Enquiry, ſhould be grown upon the ſame Ground, in alternate Rows, and ſhould undergo this Examination for the Information of the Publick, when the Grain of each Kind is perfect and good.

However, upon the Whole, this Experiment informs the Publick, that this particular Species of Wheat is more ſuſceptible of Injury, in cold wet Seaſons, than either the Red or White Wheat; for I have loſt by the Experiment, at leaſt 50 Pounds more than I ſhould have done, had I ſown either of thoſe Kinds; but hence it is not to be underſtood, that I conceive, either of them would have produced a full Crop, becauſe I could have no Reaſon to expect it in ſuch a Seaſon; for in another Part of my Farm, I had a Field of four Acres, ſown under the Common Huſbandry, with Red Wheat, and Pains was taken in Manufacturing the Fallow (the

Ground is very poor) and I had only nine Barrels of Merchantable Corn, but what I had was good *, and ſold in the Market for 23 Shillings a Barrel; whereas, for the Cone Wheat, I got but 17 Shillings. Six Shillings a Barrel in the Price, is a vaſt Difference.

From theſe Circumſtances, I believe I ſhall hardly venture to ſow the Cone Wheat again, in any other Way, than ſo far as the Information of the Publick is concerned, in comparative Experiments, upon the ſame Ground.

Some Account of Comparative Experiments, between different Species of Wheat, ſown in alternate Rows, upon the ſame Ground.

It ſeems to be a Matter worthy of ſome Admiration, that Mankind are not yet fully appriſed, which kind of Wheat, amongſt the many Species we have of that Grain, is moſt worthy of the Farmer's Attention.

From the Inattention which I have obſerved in England to this particular, as well as in Ireland, it may not have been unnatural for a Man to take it for granted, that the Difference has been ſo trifling, that Farmers have not conſidered it as a point, worthy of any material Care.

In England I have much oftner ſeen mixed Fields of Wheat than I have of particular Species by themſelves; in Ireland, indeed, not ſo frequent; not I fear, becauſe the Farmers are more careful and better informed as to that Point, but probably becauſe fewer Acres are ſown than in England; and conſequently the Sight of the Traveller is not ſo frequently caught, by that rich cloathing of a Country, Fields under Corn.

Reflecting upon this Circumſtance, in the Summer of 1767, as I had often, ſeriouſly before, I began to conſider it an Enquiry fully within my Department; and upon conſulting ſome Gentlemen upon it, whoſe Zeal in the Cauſe of, and Judgment in Agriculture, does Honour to themſelves, and Service to their Country, and they were of the like Opinion; and therefore I was determined to introduce a ſet of Experiments in that way, for the Information of the Public, as far as the different Species of Wheat I had would admit of.

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* It is remarkable, but I have always found, that poor ground produces Wheat better in Quality than rich Ground, particularly in wet ſeaſons, but it is always inſufficient in quantity in every Seaſon, to afford profit to the farmer.

For this Purpoſe, I fixed upon a Part of the Field mentioned in my Report for the Year 1764, Page 6 &c. and 39, which has been under drilled Crops ever ſince, without any Addition of Manure, ſince that Time. But preparatory to this ſet of Experiments I made Fallow of the Land.

According to the Method, which I have hitherto practiſed, I threw the Ground into Ridges of five Feet breadth for drilling.

Of thoſe Ridges, the Ground afforded 72, and each Ridges was 33½ Perch long, or 672½ Feet.

On the 3d of September, 1767, I began on one ſide of the Ground to ſow with the Drill Plough, Blue Cone Wheat, and ſowed with that Kind of Corn, every *third* Ridge through the Field, by which the Reader will perceive, that by this Method, although we began on one Side, yet we finiſhed with this Species of Corn on the other, and that conſequently, one third of the Ground was ſown with this Species of Wheat, amounting to 24 of our Ridges.

On the 4th of September, 1767, I began, as the Day before, with the next adjoining Ridge to the firſt, and ſowed that and every third Ridge with red Wheat.

On the 5th of September, 1767, I began in like Manner, and ſowed the white Wheat.

Thus three different Kinds of Corn, ſtood in alternate Rows through the Field; my Intention in which was, that each Species of Corn, ſhould have an equal Chance of Ground in Point of Quality: a Circumſtance which renders this Method of Experiment, one of the

Faireſt and moſt Accurate, perhaps, that an enquiring Man, can poſſibly make; not that I conceive, that any thing leſs, than a Series of Experiments in this way, can accurately inform us of the Truth, with Reſpect to what Kind of Corn is to be preferred.

In this firſt Eſſay upon this Enquiry, the Reader will perceive, that of each Kind of Corn, there were 24 Ridges in the Field, each Ridge, 672½ Feet long, and 5 Feet broad.

If we multiply our Length by the Breadth, the Number of ſquare Feet in each Ridge, will appear to be 3362½, which being multiplied by 24, that being our Number of Ridges under each Kind of Corn, our Anſwer will be 80700. That will be the Number of Feet, in each of our Parcels, of 24 Ridges.

441 Feet, being the Number in a Perch of Ground, that Number is to be our Deviſor of 80700, which will ſhew, that each Parcel of 24 Ridges, contained 183 Perch, (wanting 7 Feet,) Plantation Meaſure; which is one Acre, and 23 Perches, under each Kind of Corn.

This Field was regularly Horſe-hoed, as I have deſcribed in my former Reports, and the Corn made a tolerable Appearance during the Summer, but was not equal in Point of Produce, to what might have been expected, had the Seaſon been more favourable.

As this Experiment tended but to one Queſtion, it is not neceſſary for me to enter into particulars reſpecting the Expence which attended it; becauſe every Man who is acquainted with Country Buſineſs, will be ſenſible, that this Experiment muſt be attended with conſiderably more, than had Loſs and Gain been the Account to be kept; for the Manner of ſowing was tedious, and the Manner of reaping much more ſo; becauſe one Kind of Wheat was firſt reaped, and muſt have been diſpoſed of, before a ſecond Kind could be reaped; in order to put it out of the Power of the Careleſsneſs or Inattention of the Reapers to mix the different Kinds of Corn.

The 24 Ridges of Cone Wheat produced 7 Barrels, 13 Stone, and one Pound. The Red produced 6 Barrels, 17 Stone, and 6 Pounds, and the White 6 Barrels, 12 Stone, and 13 Pounds.

Thus wee ſee, that the Cone Wheat produced more than the Red, by 15 Stone, and nine Pounds, and more than the White, by one Barrel and 2 Pounds, and that the Red produced more than the White, by four Stone and 9 Pounds.

The Cone Wheat was much better Corn than that which grew in the large Field I have already ſpoken of, but by no means equal to what I have had in former Years.

There was ſome Smut in this Corn, but in no proportion to what there was in the large Field, but none that we could diſcover in the other two Kinds.

A Circumſtance, which ſeems to confirm, what I ſuggeſted before, when ſpeaking of the other Field, that from the largeneſs of the Ears, it retains, and is more attractive of Moiſture, than the other two Kinds; and therefore ſeems ſtrongly to indicate, that great Wet, and extraordinary Dews, are productive of Smut; but this is a Subject which I am almoſt afraid to touch upon, as I almoſt deſpair of ever diſcovering the real Cauſe, with accurate Certainty; for it ſeems to have baffled the Enquiries of the moſt ingenious and capable, who have entered upon it; and yet we have not been without Writers, whoſe Vanity has inflated them with Exultation, at their imaginary Segacity, in accounting for this Diſeaſe; but the Papers of ſuch, have appeared, as it were in the Morning, and like the Sun, diſappeared in the Evening, never to trouble the Public by a ſecond Peruſal.

The red and white Wheats, eſcaping the Smut, is a ſtrong Indication that they are better adapted to the Climate of Ireland, than Cone; and that they are more robuſt, although they are not ſo in Appearance.

The red Wheat was better Corn than the Cone, but even that was not ſo good, nor ſo bright as the White, for the latter, when cleaned from the Chaff, was what the Farmer and Baker calls a fine bright Barrel of Corn; but the Grain was ſmaller, than it would have been in a more favourable Seaſon.

The Smut being leſs ſevere to the Cone Wheat in this Field, than in the large Field, already ſpoken of, I cannot account for, in any other way than this.

The large Field, from its great Size, muſt be more expoſed to every Point of Wind, than the ſmaller one, but the large one is more particularly expoſed to the Weſt, and North of the Weſt.

The ſmall Field, is particularly well defended from thoſe Points, by very lofty Hedges; and the North of the Weſt, bears upon a Corner of the Field; the Hedges forming right Angles, which muſt very much break the Winds, and thereby greatly defend the Field.

It may ſeem ſomewhat adventrous, to riſk an Opinion, to charge the Injury by Smut, to thoſe Points of Wind; but from my Obſervations, I have found, that with theſe Winds it is, we have immoderate Rains in Ireland; and in the Courſe of ſix Years, that my Time has been devoted to the Service of the Public; we have had three failing Crops of Wheat; by Ruſt (commonly called Mildew) and Smut; and thoſe have always happened with heavy Rains from the Weſtward.

Hence it ſeems, that we may naturally ſuppoſe at leaſt, that wet Seaſons are productive of Smut and Ruſt; if we may not apprehend, that Winds from the Weſtward, are ſomewhat contributary.

But I have certainly found, that in ſix Year's Obſervation, moſt of the Rain we have had in that Time, has been attended with high Winds, and Storms from that Point, or from the North or South of it, (but more generally inclining to the Northward, which alſo accounts for its general Coldneſs.) And as the Cone Wheat ſuffered much leſs by the Diſeaſe of Smut in the ſmall Field, than in the large one, I think it ſeems not improbable, but that point of Wind contributes to the Diſeaſe, becauſe the ſmall Field is much defended from that Point, whereas the large one is quite expoſed to it.

However, I offer none of this Reaſoning as concluſive; it is ſufficient for me to inform the judicious Readear with my Obſervations; he will draw his own Concluſions; and I hope the Ingenious will not be unmindful in their Endeavours to diſcover the Cauſe of this Diſeaſe, to which Wheat, that King of Grains, (as ſome Writers have called it,) is ſo particularly liable; for Remedy cannot be applied for the removal of any Diſeaſe, either in the State, or common Occurrences of Life, until the Cauſe of the Diſeaſe be known; then the Remedy is frequently eaſy.

It now remains for me to ſay ſomething for the Information of the reader, with Reſpect to the three Species of Corn, which I introduced in this ſet of Experiments.

True it is, that the Cone Wheat, produced the greater Quantity, upon equal Quantity and Quality, we may ſafely ſay of Ground from the Manner obſerved in ſowing. For that, and other Reaſons, which I own has always prejudiced me in Favour of this particular Species of Corn; it is with Concern, that I am now obliged to ſay, I cannot recommend its Introduction upon any Farm; becauſe the paſt Year has ſhewn, that although it may be more Prolifick; yet, that it is more liable to Diſeaſe in ſevere Seaſons, than the two other Kinds or even than a Fourth, which I introduced upon my Farm in the paſt Year, of which I ſhall have Occaſion to ſay ſomething preſently, when I am to ſpeak of another Experiment.

The Straw of the Cone is very ſtrong and large, very fit for Thatch and Litter; but when the Farmer may be diſtreſſed for Fodder, that his Cattle are obliged to ſhift with Wheat Straw, this would be very ordinary for them. But the Circumſtance of this Wheat, ſeeming to yield more Bran than either the Red or White, is a very capital Objection to it; and my Family inform me, that in handling of it in Flour, for the Purpoſe of making Bread, that there is a harſhneſs in the Flour, like that of Barley Meal, made into a Kind of Doe for Poultry. Perhaps this Objection may be more prevalent in the paſt Crop, than it would be in a favourable Seaſon.

The red Wheat is a Species of Corn, which I have alſo, always been fond of, from its lovely Appearance in the Field; but Experience informs me, that it never has that Brightneſs either in Grain or Flour, which the white Wheat has; neither will it, I believe, produce ſo much Flour as the White; but of that I am not certain, as I have not had an Opportunity of examining this Point, with that Accuracy which I intend to obſerve.

And as I do not pronounce upon this Circumſtance with Certainty, I ſhall, ſo long as I ſhall have the Honour to continue in my preſent Occupation and Service, endeavour to repeat this comparative Experiment, until I ſhall be enabled to give the Public ſome accurate Information, not only upon the firſt Queſtion, which this comparative Experiment tended to; but alſo upon the ſeveral conſequential Ends which it leads to; and will eventually anſwer with more Accuracy, than any other Manner of ſowing or enquiry can poſſibly do.

And for this Purpoſe, I hope to introduce a greater Variety of Wheat, ſince I find, upon carefully examining Sheaves, that there are different Species of the Red and White.

But the Tedioufneſs and Labour, there is in ſeparating Corn, Ear by Ear, and that by my own Hand, as muſt be the Caſe upon ſuch an Enquiry, in order to obtain diſtinct Kinds for Seed, will apologize for me to the Public, that my Experiments in this way, cannot immediately be very extenſive.

An Experiment upon Ground which had born four Drilled Crops in Succeſſion; by manuring the Intervals or Furrows of the preceding Crop, for a 5th drilled Crop.

By referring to my Report for the Year 1764, Page 35, and 38, the Reader will find, that a Part of one of my Turnep Fields for that Year, was manured with ſhell Marle; another Part with native Earth, and the remainder of the Field with Compoſt, as deſcribed in that Report.

Two Acres of this Ground, has ever ſince been devoted to the comparative Experiment, between the Drill and Common Huſbandry, as hath been already treated of in this Report; another Part contains my Field Plantation of tranſplanted Lucern, and the remainder has been under the Drill Culture ever ſince.

After the Turneps of 1764, this Ground was, in the Spring 1765, drilled with Barley, in Autumn 1765, and Autumn 1766, drilled with Wheat.

The Report of 1764, will ſhew that Part of the Ground was very indifferent, as accordingly were our Crops, for they are much guided by the Richneſs or Poorneſs of the Ground.

This poorer Part of the Field, I was inclined to try the Experiment upon, of ſprinkling Manure in the Intervals of the preceding Crop; in order to aſcertain by actual Experiment, what would be the Event, for carrying on a Succeſſion of drilled Crops, for a long Term of Years; and therefore I executed this; ſo that the Reader will underſtand, that our 5th Crop ſtood over the Manure, which was put in the Intervals or Furrows of the 4th Crop.

From this Experiment, I own I had great Expectations, but I was as much diſappointed in the Event, for there was no removing the Weeds by the Horſe Hoe, which roſe amongſt the Corn, and immediately upon the Verge of that Part of the Ridge, which the Hoe Plough does not touch; and they were ſo prolifick by the Wetneſs of the Seaſon, and I ſuppoſe the Seeds which probably were in the Manure, and the Vigour which that alſo contributed; that as faſt as I removed them by Hand, and Hand Hoes, they ſeemed to riſe again like Hydras; inſomuch, that indeed they were very troubleſome to me; and muſt have been very injurous to the Crop.

The only View which I had in this Experiment was, that of invigorating the Ground, thereby to diſcover, how far the Drill Huſbandry may be extended by a Succeſſion of Crops without Intermiſſion, by the Aid of Manure; but if the Manure uſed in this way, be Dung or Compoſt; I own that I am obliged to ſay, the Weeds will be found very troubleſome; but perhaps Manure which does not contain the Seeds of Weeds, may anſwer better.

However, I fear a Succeſſion of Crops of Corn cannot be carried on for any long Time, without introducing Turneps every third or fourth Year, to clean the Ground, which they and the Horſe Hoe together will effectually do; by which Means, I do believe Crops may be obtained without Intermiſſion, to the end of Time.

The kind of Wheat I ſowed in this Piece of Ground, is a ſort of white Wheat, and is known by a few, under the Name of Egg-ſhell Wheat. It appears to produce a ſmall Ear, and ſhort Straw; the Grain is fine, the Skin thin *, its Flour very Good and White, and the Corn affords but little Bran.

In about two Acres and an half of Ground ſown with this Corn in the paſt Year, I had only 12 Barrels, and a few Stones of Corn; but much may be charged to the Seaſon; and this Corn had a little Smut, the Expoſure being a good deal to the Weſtward.

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* And thence I ſuppoſe takes the Name of Egg-ſhell.

When I come to renew my Comparative Experiments, between the different Species of Wheat, I intend to introduce this Egg Shell Wheat as one of the kinds, for a Gentleman or two of my Acquaintance has it, and they ſpeak largely in its praiſe.

Comparative Experiments between different Species of Turneps, ſown in Drills; and in alternate Rows.

My Report for the Year 1764, ſufficiently proved the Superiority of the drill Huſbandry for Turneps, not only in Point of Produce, but in many other Advantages and Conveniencies, as will appear to the Reader, by refering to that Report.

As that Queſtion was concluſive, as to which Huſbandry is to be preferred for Turneps, it was unneceſſary for me to enter into an Experiment of that kind; but which *kind* of Turneps are moſt profitable to the Farmer or Grazier, I conſidered as a Queſtion of Importance to aſcertain; and therefore, as I had about two Acres of Ground, which had produced Potatoes, in the Summer of 1767, I determined to introduce a comparative Experiment upon this Ground, between as many Kinds of Turneps, as I could procure the Seed of.

For this Purpoſe, I ploughed the Potatoe Ground, after the Potatoes were taken off, in order to give it the Benefit of a Winter and Spring Fallow, by which Means, my Ground was in fine Order, when I came to ſow the Turnep Seed.

Preparatory to this, I threw the Land into Ridges five feet wide; in the Manner which I have heretofore deſcribed in my former Reports.

The Species of Turnep Seed which I endeavoured to procure were of ſix Kinds, *viz.* The Red, commonly called the Red Sheep Turnep, the White Norfolk, the

White Tankard, the Red Tankard, the Green Turnep, and the Yellow Turnep.

The Manner which I purſued to ſow theſe different Kinds was the ſame as that which I followed in ſowing the different Kinds of Wheat, as already mentioned; by beginning on one ſide the Field with one kind of Seed, and ſowing every ſixth Ridge through the Field; and then began with another Kind, and ſowed that, and the remaining four Sorts in like Manner; ſo that the ſix Kinds ſtood in alternate Rows through the Field, each having an equal chance of Ground, in point of Quality; and they were all ſown on the 30th. of June.

The Turneps were thinned by Hand in their Infancy, and Horſe Hoed, in the manner already deſcribed in my Report for the Year 1764; ſo that I need not enter into the Particulars of thoſe Circumſtances, but for the Information of the Reader, refer him to that Report.

The Turneps eſcaped the Fly, and every other Accident to which they are liable, and they throve very well.

But it was not a little provoking to find, that I had been deceived in one of the Kinds of Seed; for that which was ſold to me for Red Tankard, proved to be the common Red Turnep; all the reſt were pretty faithful, except that the White Tankard and White Norfolk were a little mixed; however, they were very fine Turneps. Of the Red Tankard I had but two Turneps that I could find in the whole Field, and as they were very fine Ones, I took them up, and have tranſplanted them for Seed.

Being diſappointed in the Red Tankard, I have only to give an Account, of the Produce of the five other Kinds.

That I might be enabled to do this with accuracy, I attended on the firſt and ſecond of January 1769 in the Field, to ſee a Row of each Kind immediately adjoining each other pulled, and as each Row was taken up, they were drawn home in Carts and weighed, the Weight of each kind were as follows.

	T.	C.	Q.	lb.
No. 1. The Red, or Sheep Turnep	1	15	1	14
No. 2. The White Tankard	1	19	2	6
No. 3. The Yellow	1	8	2	0
No. 4. The White Norfolk	1	16	2	0
No. 5. The Green	1	2	0	0
	8	1	3	20

Now I ſhall compare the acreable Produce, by firſt examining our Quantity of Ground in each Ridge, in order to aſcertain how many of them will be required to make a Plantation Acre.

The Ridges were 30 Perches in Length, which being multiplied by 21, ſhews they were 630 Feet long; and being 5 Feet wide, we are to multiply the Length by the Breadth, and our Anſwer will be 3150, which are the Number of Feet of Ground in each Ridge. This is to be the Deviſor of 70560, which are the Number of Feet in a Plantation Acre; and our Anſwer will be 22, and a Fraction of 1260 Feet.

Thus we find, that 22 of our Ridges make a Plantation Acre, wanting 1260 Feet, or $\frac{1}{56}$ of an Acre.

No. 1. The Quantity obtained from a Ridge of the Red Turneps we have ſeen, was 35 Hundred, 1 Quarter, and 14 Pounds, which being multiplied by 22, amount to 38 Tons, 18 Hundred, and 1 Quarter. To this we are to add the Fraction of 1260 Feet, in Order to make up the Acre; which according to the Produce of the Red, is ſomething more than 20 Ounces to a Foot; which Growth upon 1260 Feet, amounts to 14 Hundred Weight and 7 Pounds; which being added to the Produce of 22 Ridges, makes our acreable Produce of the Red Turneps 39 Tons, 12 Hundred 1 Quarter, and 7 Pounds.

No. 2. A Ridge of White Tankard we have ſeen afforded 39 Hundred, 2 Quarters, and 6 Pounds, which being multiplied by 22 amounts to 43 Tons, 10 Hundred Weight, and 20 Pounds; and this Produce is in the Proportion of 22½ Ounces to a Foot, which upon our Fraction of 1260 Feet, amounts to 15 Hundred Weight, 3 Quarters, and 6 Pounds; which being added to the 43 Tons, 10 Hundred, and 20 Pounds, makes our acreable Produce of the White Tankard, 44 Tons, 5 Hundred, 3 Quarters, and 27 Pounds.

No. 3. A Ridge of Yellow Turneps we have ſeen, afforded 28 Hundred, and 2 Quarters, which being multiplied by 22, amounts to 31 Tons, and 7 Hundred Weight, which is in the Proportion of a trifle more than One Pound to a Foot; and therefore the Fraction of 1260 Feet, amounts to 11 Hundred Weight, and 1 Quarter, which being added to the above Produce of 22 Ridges, makes our acreable Produce 31 Tons, 18 Hundred, and 1 Quarter.

No. 4. We have ſeen, that the Ridge of White Norfolk afforded 36 Hundred, and 2 Quarters, which being multiplied by 22, amounts to 40 Tons, and 3 Hundred, which is in the Proportion of ſomething more than 20 Ounces and ¾ to a Foot, and therefore our Fraction of 1260 Feet, affords 14 Hundred, 2 Quarters, and 10 Pounds, which being added to the above Produce of 22 Ridges, makes our acreable Produce of the White Norfolk Turnep, 40 Tons, 17 Hundred 2 Quarters, and 10 Pounds.

No. 5. We have ſeen that the Ridge of Green Turneps, afforded 22 Hundred Weight, and 7 Pounds, which being multiplied by 22, amounts to 24 Tons, 5 Hundred, 1 Quarter, and 4 Pounds, which is very near the Proportion of 12 Ounces and ¾ to a Foot; and therefore our Fraction of 1260 Feet, affords 6 Hundred Weight, and 22½ Pounds, which being added to the above, makes our acreable Produce 24 Tons, 11 Hundred, 1 Quarter, 26½ Pounds.

For the more immediate Convenience of the Reader, I ſhall now ſtate the different Kinds in a Sort of Table, by which, at one View, the Produce of the different Kinds will appear; and I own, I am not a little provoked that I cannot add the Red Tankard, as a ſixth Kind as I intended; and I cannot but conſider it as very criminal in Men, that they will not furniſh the thing their Purchaſer calls for, the Diſappointment is very aggravating; particularly in my Caſe, becauſe I wait an Year to aſk a Queſtion of the Earth by Experiment for the Information of the Publick, and my own Satisfaction; and truly, I then find, that I have paid a Seeds-man, for a thing which I did not buy of him; have loſt my Time, Care and Expence; and am diſappointed in my Enquiry, by an Impoſition, which ought to mark his Name, could I allow myſelf to brand him with ſuch a tipe of Infamy. And what renders this Kind of jeſuitical Fraud more provoking is, that I have been frequently treated in this Manner.

A Table, ſhewing at one View, the acreable Produce of five kinds of Turneps, ſown in alternate Rows, under the Horſe-hoing Huſbandry.

	T.	C.	Q.	lb		Pounds.
No. 1. The Red or Sheep Turnep	39	12	1	7	or	88739
No. 2. The White Tankard	44	5	3	27	or	99231
No. 3. The Yellow	31	18	1	0	or	71484
No. 4. The White Norfolk	40	17	2	10	or	91570
No. 5. The Green	24	11	1	26½	or	55060

Thus we ſee, that the Yellow and Green Turneps, ſeem to be out of the Queſtion in Point of Produce, for the Purpoſe of the Farmer or Grazier, for they afford conſiderably leſs than either of the other Kinds, particularly the Green.

But the Contraſt ſeems to be between the Red No. 1, the White Tankard No. 2, and the White Norfolk No. 4, and this comparative Experiment ſeems to declare in favour of the White Tankard, becauſe that we ſee, has afforded near three Tons and a Half more than the White Norfolk, and near Five Tons more than the Red; and the latter, one Ton five hundred leſs than the White Norfolk; but theſe are differences in Point of Produce, which I think ſhould not be conſidered as concluſive upon one Experiment, with reſpect to which Kind the Farmer ſhould chooſe for his Purpoſe of theſe Three; tho' I think the Experiment ſufficiently concluſive for him to exclude at leaſt the Green, if not the Yellow alſo; and therefore, when I repeat this comparative Experiment in the enſuing Seaſon, I intend to omit the Green; the Yellow I intend to continue for a Reaſon which will appear preſently.

I ſhall now trouble the Reader with a few Obſervations, upon the Quality of theſe different kinds of Turneps, ſo far as they relate to the Purpoſe of the Farmer or Grazier.

The very Name of White Norfolk, ſufficiently indicates, that in the county of Norfolk, the large White Turnep is preferred by the Improvers and Farmers of that County and Neighbourhood of England: a County, to the Honour of its Inhabitants, in which perhaps, the Improvements of barren ſandy Land has been carried higher, and that to almoſt an incredible Extent, than any other Part of the Kingdom; and that chiefly by Turneps: and I ſincerely wiſh, that the Improvers of Ireland, would be animated by ſuch an Example to a more general Culture of a Plant ſo valuable, not only in itſelf; but alſo in its Conſequences; for there is no Crop that I know of, or any Fallow, that the cloſeſt Application and greateſt Expence, which will ſo effectually clean Ground for Corn, or any other Purpoſe whatſoever; for they not only deſtroy all Weeds, but ſo finely prepare Land, that were I to lay out a new Garden, Turneps ſhould be my firſt Preparation.

The Ground which I had under the Kinds already mentioned, after having been once ploughed, is now in ſuch a ſtate, as would delight any Man to ſee, who is a Judge of a fine Preparation of Land.

The Reader is not to conclude from hence, that he has nothing to do, but to throw Turnep Seed into his Ground, in the ſlovenly, idle, and inconſiſtent Manner which I have frequently ſeen, and that the Turnep Seed will prepare his Land for Corn! No, it is the Growth of Turneps which prepare it, and not their ſtarving; and therefore, whoever attempts this Culture, muſt firſt perfectly reduce the Land; manure it well, with ſuch Manure, as his Experience hath ſhewn, beſt to agree with the Ground; and upon his Turneps coming off, he will find his Land in high Condition for any Kind of Purpoſe, particularly, if they have been cultivated in the Drill Way.

This Turnep, the White Norfolk, ſhews the improvers of that County, to be judicious in their Obſervations; for this kind of Turnep, ſeems to be particularly well adapted from its make, for keeping in the Winter, for they riſe upon their head or upper Part, and are in their Shape, not unlike the large end of an Egg, by which they compleatly throw off the falling Rains of the Winter, and therefore ſeem particularly well adapted to the Uſe of the Farmer.

The Red Turnep, commonly called the Red Sheep Turnep, ſeems to be the Kind preferred in Ireland, for I have obſerved that to be the Sort, chiefly cultivated here, from an Opinion I have been told, that it is more robuſt than any other Kind.

I am ſorry I cannot confirm that Opinion, for I have found it more periſhable, than the Tankard or White Norfolk; and that from a very natural and ſtriking Cauſe.

The Apple of this Turnep (the Red) is rather flat, and about the Neck, where the leaves unite, the Apple is indented; ſome indeed, more than others.

In theſe indented Places the Rain lodges, as it were in a Cup, and very ſoon brings on Putrefaction: a Circumſtance which ſhews I think, that they are not ſo good a Kind, as either the White Norfolk or Tankard; becauſe no Water can lodge upon either of thoſe Kinds; and in this comparative Experiment, they (the Red) appear not to produce ſo great a Quantity, from equal Culture, and equal Ground.

The Leaves of the Red decay much ſooner than thoſe of the two other Kinds; very probably from the Circumſtance of the Water lodging in the indented Places of the Turnep; and I have imagined, that upon cutting ſeveral of theſe three Kinds, that the Red are not ſo firm in their Texture as the White Norſolk and Tankard, but this is a Circumſtance which I ſhall examine repeatedly in future Crops, in the courſe of my repeating this Experiment.

The Red Turnep being flatter than the White Norfolk or Tankard, renders it conſiderably dirtier, when taken up for the purpoſe of paſturing Cattle upon Meadow, or in the Bails; whereas, the Norfolk and Tankard, from their riſing conſiderably above the Ground, are always pretty clean, particularly in dry Weather, for the Bottoms, which are in the Soil, penetrate like a Cone, and therefore in the Drawing, leave the Earth behind; whereas the Red, and every other flat Turnep, generally bring up more or leſs Soil, adhering to them.

From thoſe Circumſtances, I think it ſeems probable, that the White Norfolk and Tankard Turneps, are the Kinds moſt worthy the Attention of the Farmer and Grazier.

The Tankard Turnep, ſeems to be a Kind particularly well adapted to ſtiff and wet grounds, becauſe they ſtand ſo much above the Soil, and the Part which enters it ſeems to penetrate not unlike a Dibber; and whether they are to be conſumed upon the Ground they grow, (which I conſider a bad Practice) upon Meadow, or in the Bails, the Cattle or Sheep, can ſeparate them much ſooner and eaſier, than they can any flat Turnep, and none are ſo eaſily ſliced, their Shape contributing very much to the Diſpatch of that Buſineſs.

The Leaves of the White Norfolk and Tankard, are conſiderably more luxuriant than the Red. The Yellow and Green produce ſcarce any Leaves at all, comparatively ſpeaking.

We have ſeen they are far deficient in Point of Produce, from either of the other Kinds; but I muſt not omit to ſay, in Favour of the Yellow Turneps, that they are much firmer in their Texture, than any other Kind, that I ever have cultivated; and therefore promiſe to be very durable in the Winter; unleſs their being ſo immerſed in the Soil, ſhall contribute to their Putrefaction, that I may be able to inform the Public on this Point, I ſhall continue the Yellow Turnep, when I repeat this Experiment.

Some Account of the Effects of feeding Store-Cattle, Plough Bullocks, and Milch Cows, with the Turneps already mentioned.

Of the different Kinds of Turneps which I have already mentioned, I had 44 Ridges, which I have already ſhewn, amounted to near two Acres.

By adding together, the Produce of the five Ridges which I weighed, we have already ſeen they amount to 8 Tuns, 1 Hundred, 3 Quarters, and 20 Pounds, and therefore our actual Produce upon the 44 Ridges, was 71 Tuns, 4 Hundred, 3 Quarters, and 24 Pounds.

Had the Field been ſown all with the Kind, which appears to have produced the greateſt Crop, *viz.* the white Tankard, our 44 Ridges would in that Caſe, have produced 87 Tuns, 1 Quarter of an Hundred, and 12 Pounds; ſo that by the comparative Experiment, 15 Tuns, 15 Hundred, 1 Quarter, and 16 Pounds, of Turneps were loſt; however, that ſhall not prevent my repeating the like Experiment, becauſe I conſider it as a very material one.

With our actual Produce of 71 Tuns, 4 Hundred, 3 Quarts, and 24 Pounds, I began on the 2d of January, 1769, to paſture my horned Cattle, which conſiſted of 42 Head, including plough Bullocks, Milch Cows, Heifers, Stirks, and Yierlings.

The Cows which remain of the Stock I had in the Year, 1764, when I had the great Quantity of Turneps, and which my Report of that Year gives an Account of, and my plough Bullocks, which were only Stirks at that Time, all took to eating the Turneps immediately, notwithſtanding the long Interval of Time, for I have had no Turneps ſince, except thoſe of 1765; which it may be remembered, miſcarried with me, but the other Cattle obſtinately refuſed them for three or four Days, ſave, that they nibbled at the Leaves a little; and after thoſe few Days were elapſed, the Cattle of all Ages, eat the Turneps very freely, and became indifferent about the Leaves.

For their Paſture in the Day time, I had the Turneps ſpread upon a Meadow of about two Acres, beginning on one ſide of the Field, and covering a Ridge at a time, and ſo proceeding regularly, Day after Day, through the Field; and every Evening Turneps were given to the Cattle in their Bails.

Proceeding thus, my 44 Ridges of Turneps, maintained, with a ſmall Allowance of Oat Straw in a Morning to the Store Cattle, and a little Hay to the Milch Cows, 42 Head of Cattle ſix Weeks.

Here we reduce this Buſineſs to Practice in a pretty large way; and I wiſh the Farmer, Grazier, and Dairy Man to conſider how important a Conſideration this is; particularly, when they compare what two Acres of their beſt Meadow would do in Paſture in the Summer, with 42 Head of Cattle upon it; their Anſwer would be that in ſix Weeks they would be ſtarved. Can he then, have a ſtronger Invitation to the Culture of Turneps, when he thus ſees what a Quantity of Winter Paſture they afford.

But there are yet further very material Conſiderations; for by ſpreading the Turneps in the Manner I have already mentioned, I have gone over two Acres of Meadow; and every Man will imagine, that 42 Head of Cattle ſtanding for the Days of ſix Weeks upon ſuch a Piece of Ground, muſt have afforded by their Dung and Urine, a pretty handſome dreſſing to it.

Beſides this, I found another very inviting Effect from my Purſuit of this Experiment; for before I began to uſe the Turneps, the diſtreſs of my Family for Milk was very great, and will be better conceived by large Families, where there are Half a ſcore young People, and ſome Milk Drinkers beſides, as is my own Caſe, than I can deſcribe.

For the firſt three or four Days indeed, the Milk had a ſtrong Flavour of the Turneps, even to be diſagreeable; but that preſently went off.

We had afterwards, a great redundancy of Milk, and beſides that churned ten Pounds of Butter a Week; ſo that in many Particulars, we ſee, there are great Conveniencies, as well as Advantages ariſing from the Culture of Turneps; and therefore I earneſtly recommend to the Farmers of Ireland, that they bend their Attention, at leaſt to the having a few Acres under Turneps every Year; their Culture is cheap and eaſy; and the purchaſe of the Seed a mere Trifle.

And Gentlemen of landed Eſtate will permit me to recommend it to them, that they urge their Tenants of ſmall Farms to an undertaking ſo eaſy, ſo cheap, ſo advantageous; and ſo much within their Power; ſince, by this Experiment, I have reduced the Practice to their own preparation of Ground; namely that of Potatoes, which their Turneps may follow; whereas, were they obliged to devote their Dung to the Purpoſe of Turneps, and thereby, give up their Potatoes, I ſhould deſpair of their adopting the Practice; but in

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this Caſe, they may firſt have their Potatoes, then their Turneps; after which, their Ground will be in better order for Barley, than were they to ſow it after Potatoes, and Barley generally brings a better Price than Bere.

And if with the Barley, ſuch Occupiers can be prevailed upon to ſow about 20 Pounds of red Clover Seed to the Acre, for the Purpoſe of ſoiling their Horſes and horned Cattle during the Summer; that, with the Turneps, would enable them to manure double, and ſo as they increaſe triple, and quatriple the Ground they ever had done, or can poſſibly do, from their preſent Practice, as I ſhall demonſtrate preſently, when I enter upon another Subject.

But to return to my Point of introducing the Culture of Turneps in Drills, amongſt the midling or poorer Farmers of Ireland; I am to obſerve, that I am aware of the Objection which will be at once offered, by way of Impediment; for, from a Languidneſs attending the Purſuits of one race of Men, and the Exerciſe of the Invention of another ſet, to raiſe Difficulties and Obſtructions; the third have enough to do, to carry on and execute the general Buſineſs of Life; but what a *ſhivering* Race of Mortals would the two firſt ſets be, were it not for the Eagerneſs of the third in their Purſuits, every Man of an active Spirit, can picture to himſelf.

I ſay, I am aware, that it will be aſked, by way of Objection, where muſt theſe kind of Farmers get the Drill and Hoe Ploughs, and Drill Harrows, to execute this Buſineſs?

To remove this Difficulty, let the Man who ſhall be excited to the Attempt of cultivating Turneps, after making his Ridges (if his Landlord has not the Inſtruments to lend him) juſt level the crown or centre of the Ridges, with an Iron-toothed Rake, then open a ſmall Furrow along the middle with an Hoe; and to ſow the Seed, let him put it into a powder Horn or ſmall Bottle, and by his Fore-finger, upon the Mouth of the Horn or Bottle, in the Manner that he would prime a Gun, let the Seed trickle out, as he paſſes along, only that he muſt ſow it as thin as poſſible; this being done, for covering the Seed, let him draw the back of the Rake head, along the Ridge, in doing which, he may walk pretty faſt.

For the Hoe Plough, any Man that can make a Plough, will make him a ſmall one to work with two Horſes, one before the other; and ſuppoſe it is not quite perfect; yet, it will introduce the Practice; and Succeſs will encourage the Purſuit; but ſurely, a Landlord would not ſuffer ſuch a Tenant to be long without a good Hoe Plough, if it could be had, ſince the Expedients which I have mentioned, anſwers for all the reſt.

The Manner of making the Ridges, is no more than the ſix ſod Ridges, which are made for Wheat, almoſt through the Kingdom.

Let us ſuppoſe now, that by this Attempt, a little Farmer ſhould, after thinning his Turneps, ſo that every one occupies a Foot in the Row, and that one with another, each Turnep weighs five Pounds; in that Caſe the Ridges been five Feet wide, every Foot of Ground, would produce a Pound of Turnep Food; and therefore an Acre Plantation Meaſure, containing 70560 Feet, would afford a Crop to him, of 31 Tuns, and 10 Hundred Weight.

Would not this be a prodigious Acquiſition to a poor Man, for his little Stock of Cattle in the Winter, abſtracted from the Circumſtance of helping his Meadow, ſaving his dry Fodder, adding to his Dunghill, and increaſing his Milk and Butter?

And I am well ſatisfied that there are Grounds which will produce much greater Quantities of Turneps, than I have been able to obtain. The largeſt of my Turneps this Year weighed but 12 Pounds; I have had them of 15, which indeed were the largeſt I ever had; but I have heard People talk of 20 Pounds, but I never had any of that Size.

In the Explanation of my liſt of Inſtruments, 3d Edition, 1768, when ſpeaking of the Turnep ſlicing Engine, p. 24, I have ſaid, "I continue to give this Inſtrument "a Place in my Liſt; but from the Method which I "have lately purſued in feeding my Cattle with Turneps "in the Winter, I have, in a Manner, rendered this "Machine unneceſſary, of which I ſhall furniſh the "Publick with ſome Account in my Report for the "Year 1768."

When the Cattle are put to paſture upon Turneps, which have not been uſed to them, it is neceſſary to ſlice them, but if they be large no Danger can enſue, for thoſe which have been uſed to them, will ſcoop them very handſomly, when thrown on a Meadow.

To ſlice them with Expedition, I contrived the Engine N°. 90 in my Liſt, but the Number of Times which this Method requires them to paſs through the Hand, is attended with ſome delay; and therefore, when I ſpread them upon the Meadow, one of my Scarificator Coulters is put into the Hand of a Man or Boy, who with that, chops them very expeditiouſly, and they remain in the Place.

When they are brought home to the Bails, they are thrown down, and in like Manner, by holding the Turnep upon the Frame of the Bails, two or three Blows does the Buſineſs, ſo that by this Method, my Turneps have been cut with much more Expedition, than any Machine can do them. Hence, the Turnep Engine ſeems not to be neceſſary, in this Buſineſs.

Conſiderations, upon the moſt profitable Method of ſupporting Horſes, Dairy Cows, Plough Bullocks, and Store Cattle, reduced to Practice, in the ſummer of the Year 1768.

I am now to enter upon a Subject, which, from the ſtrong Impreſſion it has made upon my Mind, by a long and thorough Conſideration of it, I conceive to be of as much Conſequence to the Landholder, as perhaps any Subject I have ever yet entered upon.

Much has been ſaid, and that, I am fully perſuaded, with a great deal of Reaſon, in the Recommendation of Artificial and Exotick Graſſes; and yet we find but few Farmers who adopt them, even in England, and much fewer in Ireland.

In England indeed, Clover is very generally introduced, and in ſome Parts of the Kingdom, Sainfoin is very largely uſed, but in Ireland, I am ſorry to obſerve, that even Clover has made but little Progreſs, and Sainfoin is ſcarcely known.

In this general Obſervation, it will hardly be imagined, that I mean to include Gentlemen, who cultivate various things of this Kind, for their Amuſement, when they are in the Country; but the Farmers in general, are much unacquainted with them, and therefore very unwilling to bend their Attention to, or hazard any Expence, Trouble or Labour for them; until by repeated Trials, and long Inſpection, at the Expence of Gentlemen, they ſhall be invited by ſmall Attempts, to introduce little Quantities upon their Farms.

This being the Caſe, I have long conſidered, that it might not be amiſs to reduce to practice in a pretty large Way, a Method of maintaining their Cattle, at a much leſs Expence by natural Graſs during the Summer, than they do at preſent.

In the Summer of 1766, I attempted this undertaking upon Speculation, but my unfortunate Fire overſet that Scheme ever ſince, until laſt Summer; when I reſumed my Project, of bailing up all my horned Cattle, and confining my Horſes during the Summer, as regularly as I do in the Winter.

For this Purpoſe I had reſerved a ſufficient Quantity of Straw in order to bed them properly, that I might effectually accompliſh my Point, in all its Views, and to feed them, I devoted a ſmall Meadow containing near two Acres; but as the Ground was not in the Condition I wiſh to have it, the Graſs was not ready for my Purpoſe, ſo early as I expected.

However, the Walks in a ſmall Orchard I have afforded tolerable Graſs by the middle of May; with that, and about half an Acre of tranſplanted Lucerne; I began to fodder all my Cattle of every Kind; concluding, that before this reſource ſhould be exhauſted, the Meadow would be ready.

middle May
1/2 Acre Lucern
[illegible] 1/2 Acres
38 Head
[illegible], 38
2 Weeks [illegible]
2 Acres

My Stock at that Time, conſiſted of 38 Head, including Horſes, of which I had ſeven Cows, Plough Bullocks, Heifers and Stirks.

The Graſs of the Orchard and Lucerne, carried them on to the ſecond Week in June, when I began upon the Meadow, by mowing the Graſs, and bringing it Home to the Bails, as I did with the other, every Afternoon, againſt the Cattle came in, in the Evening; and this little Meadow plentifully foddered the 38 head of Cattle every Night for ſix Weeks; but I gave them none in a Morning, which I think was wrong; but next Summer I will fodder twice a Day.

The Orchard, after the Meadow began to ſupply them, was devoted to my young Calves, of which I bred eleven: theſe it will be imagined, conſumed a great deal of Milk, beſides ſupplying the Family and making Butter.

When

Meadow 2 Acres
Lucerne 1/2 D°
hard & grass walks 2 - D°
4 1/2 Acres

When the horned Cattle were turned out in a Morning, they were drove to a Common, adjoining my Farm, which was calculated to give them Air and ſtretch their Legs, and not for what they could pick up, for the Paſture is always over-ſtocked, and conſequently is bare.

The Horſes and Plough Bullocks went to their Labour, and had Soil every Day at Noon.

By this means, I had not a four footed Beaſt paſturing upon my Farm (except the Calves in the Orchard) all the time. After the Meadow devoted to this Purpoſe was exhauſted, I had recourſe to my Head-lands, and other bits of Graſs in my Corn Fields, inſomuch that I had not a Beaſt lying out, from the Time of taking them in, the latter end of October, 1767, until after Harveſt, 1768; and then I turned them all out, to eat up the after Graſs of my Meadows, and what they could find in the Stubbles.

Thus I carried a Stock through the laſt Summer, with not more than four Acres and an Half of Ground, including the Meadow, Orchard-walks, Lucerne and Head-lands, which 25 Acres of the beſt graſs Land I have, would not have maintained for that Time, in the ordinary way of uſing the Graſs.

Surely, this Conſideration, muſt be very inviting to every Man who wiſhes (as I ſuppoſe every one does) to ſupport his Stock of Cattle, at as ſmall an Expence as he poſſibly can.

15
½ acres
30 Cattle
4 months
19 Head
head

But this is not the only Advantage ariſing; for the pleaſing Circumſtance of the Cattle being out of all poſſibility of breaking into, and injuring either his own, or his Neighbours Corn or Meadow, is ſuch a one, as will permit him to lie down and take his reſt, without any Apprehenſions of Danger, from, or to his Cattle.

2 Cows
4 Horses

Beſides this, there is yet another very important Advantage ariſing from this Practice in the Article of Dung; for during the laſt Summer, my Cattle made ſuch a Quantity, as was really worth a large Sum of Money;

and with what I made this Winter, to this 21ſt Day of February, added to that of the Summer, I have a Dunghil, 90 Feet long, 40 Feet broad, and 7 Feet high, which are 933 cubical Yards, and 9 Feet.

Let the Farmer conſider what an Acquiſition this is, either for Meadow, Tillage, or to follow his own Method, for Potatoes; and if he can then be prevailed upon, to ſow Turneps in the Manner, and for the Purpoſes I have before recommended; every Year his Stock may be increaſed, his Tillage and Meadow enlarged, and conſequently, greater accumulations of Dung; whereby, every Farmer, following theſe Methods, will become an Improver, inſtead of an Impoveriſher of Land.

And I am not without hope, that this Practice will prevail more with the Land-holders, than were I to ſpend my Life in making Experiments to diſcover the beſt Culture for Artificial, and Exotic Graſſes; becauſe, hereby he is diveſted of all Fear of Miſcarriage in his Crop, becauſe he is perfectly acquainted with the Nature of common Graſs, and therefore he can appeal to his own Senſes, without reſting upon the Judgment of another; he is not incumbered with any tedious Proceſs, anxious Care or Expectation; neither is he confuſed with any Prolix reaſoning, or troubled with any Machines, but thoſe, which he has from his Infancy been acquainted with; namely a Scythe and Stone, and an Horſe and Cart. Theſe accompliſh the whole Buſineſs; and his Crop is natural Graſs. All he has to do, is to improve a bit of Meadow, that it may come in as early as poſſible, to accompliſh which, if the Method I have recommended by Turneps, ſhall not be adopted, every Man knows the Manner, and therefore I need not enter upon it here.

To examine this Point a little further, by turning out ſuch a ſtock of Cattle, as I maintained laſt Summer in the Manner already mentioned, into ten Acres, ſuppoſe of very good Graſs, they would have lived well for a little while, but every Man who is acquainted with this Buſineſs knows, that 38 head of Cattle, would ſoon dirty the Graſs in ſuch a Manner, that they could not, neither

90 feet
40
3600
7
27|25200
933 cub
10 = 4933
of Dung &
load worth
consequently
Dunghill
46:13:0

neither would they eat it; and then another Field muſt be devoted to them; and that would ſoon be in the ſame Condition; ſo, that at this Rate, as I know from expenſive Experience, a Man would require for ſuch a Stock, many Acres of Ground, for them to run over, in the Courſe of a Summer.

To examine the common Practice yet further; and it will be found, that the Cattle, by treading upon the Graſs, damage and waſte a great Quantity of it; and ſome they will not bite at all, whilſt they can nibble at the young Growth. Whereas, when it is mown for them and lodged in their Bails, the long and ſhort is mixed, and they eat it eagerly without any Waſte.

I ſhall not pretend to ſay, that Cattle can be made Beef of, by this Practice, becauſe I have had no Experience of it; but I hope to inform myſelf in that Particular next Summer, by trying the Experiment with a Cow. But that the Practice makes the Dairy Cows give great Quantities of Milk is certain; becauſe laſt Summer I had but ſeven Cows, upon them, I raiſed eleven Calves, and furniſhed my Family with Milk and Butter; and we are always Sixteen in Number, ten of which are Children, who uſe a good Deal of Milk; and one of the Calves being intended for a Bull he had one entire Cows Milk.

I ſhall conclude with obſerving, that were we to give Attention to the Improvement of a few Acres of common Meadow, for the Purpoſe of ſupporting our Cattle during the Summer, in the manner I have juſt mentioned; that I cannot by any Means form a Judgment, what quantity of Food it might afford; it is not clear to me, but that it may approach very cloſely upon the Produce, of many of the celebrated exotick Graſſes; and if ſo, when we come to conſider the great ſaving, in Point of Expence, there is between the Improvement of common Graſs, and the Culture neceſſary, for ſome of the artificial or exotick Graſſes; it ſeems not improbable to me, but the former bids fair to afford nearly as large Profits, without any material Care, as the others can, with the utmoſt Care and Expence; but if I live a few Years, I ſhall be able I hope, to inform myſelf and the Publick with certainty, as to this Particular.

Conſiderations on the preſent Method of gathering, and ſaving Corn in Sheaf, with a Plan of a new conſtructed Barn, by which it is apprehended, the Buſineſs of gathering Corn may be executed for half the Expence now incurred; and that thereby, Corn may be kept as long, and ſafer than it can be in Ricks, Humbly ſubmitted to the Conſideration of the Society.

The Combinations ſo generally adopted, by the Mechanicks of the Metropolis of this Kingdom, in Defiance of all Law; and in Contempt of all Virtue, Prudence and national Policy; I am ſorry to find, has, like a Contagion, diffuſed itſelf into the Country; for the Conduct of Country Labourers, is become ſo intolerably inſolent; and their Combinations againſt the Farmer; (and that more particularly if he grows much Corn) ſo inſufferable, as well as inſupportable, that Redreſs thereof, never was more wanting; nor Expedients for leſſening the Quantity of Labour, never more neceſſary.

What I have now to offer, I hope will have the Effect of leſſening the Quantity of Labour, and conſequently the Expence; if Landlords will contribute to it; for I do not expect that Tenants in general, particularly thoſe who have ſhort Tenures, can, or will undertake it.

In the Courſe of my Practice, in the buſineſs of Tillage, which has been pretty extenſive, there is no Part thereof that I find ſo troubleſome and vexatious, as that of Harveſt; to get through it with Safety and Expedition, a Man had need to have the Eyes of *Argus*; for the Idleneſs, Impoſitions and Inſolence of the

Labourers at that Seaſon, for three Years paſt, has been beyond all Poſſibility of Bearing or Supporting; to the very great Injury of many poor Farmers, to my Knowledge; and I can truly ſay, to mine, in a great Degree.

The Expence of Reaping the Corn, I find to be the leaſt: for the Manner of binding, gathering, and ſtacking in the Field; then pulling down thoſe Stacks again; building Ricks, thatching them; and the fine idle Way they have of making *Wangles*, as they call them, to thatch the Ricks, and the waſte of Corn, with a Parcel of idle Fellows, at high Wages, amounts to ſuch a Sum of Money, as is not to be conceived by any Man, but ſuch as uſe the practice of it.

But the Expence dees not end here; for thoſe Ricks and thatch are to be pulled down again, and the Corn carried into the Barn upon Mens Shoulders for threſhing, which not only cauſes great waſte alſo; but it is employing Men to undo that, which, at great Expence had been executed; and what renders all this tedious Buſineſs more than ordinary provoking is, that the Men employed, deviſe every means they can to increaſe the Expence, in every ſtage of the Buſineſs.

Were I to proceed in minutely deſcribing all the Circumſtances, and their Tricks of Delay, to bring on, in their Sight, the *Sluggiſh* Evening, I ſhould cover a great deal of Paper; but as I wiſh not to take up the Time of the Reader, I ſhall only obſerve, that in a Courſe of ſix Years, it has coſt me an Hundred Pounds for building, thatching and pulling down Corn Ricks; abſtracted from the intolerable Waſte; which, I am perſuaded, is at leaſt ten Times as much in Ireland, upon an equal Quantity of Corn, as it is in England; and yet, ſcarcely to be avoided in this Country, where a large Quantity of Corn is to be gathered.

But to leſſen theſe enormous Taxes to the Farmer, and to render him more independent of his Labourers, I now venture, at the requeſt of ſeveral Gentlemen, to offer to the Conſideration of the Society and the Publick, a new Conſtructed Barn; and if I have not been too much flattered, I may hope, that it will meet with Approbation.

All the Objections that can be offered to the lodging Corn in Barns for keeping, I believe are totally removed in this; for it will be perfectly ſecure from Vermin, and always ſufficiently expoſed to the Air; ſo that it may ſtand as long, if not longer, with Safety, in this Situation, than it can in Ricks.

The Size of the Barn, may be proportioned at the Diſcretion, of the Perſon who is to pay for the building of it; and therefore the ſize I have fixed upon, is to be no determinate Rule; but as it is calculated, for the Purpoſe of keeping Corn in the Sheaf; the larger it is made, the better.

The Deſcription of a Barn upon a new Conſtruction, for the Preſervation of Corn in Sheaf.

Explanation of the Ground Plan.

A A. The Bays, for lodging the Corn.

B. The threſhing Floor.

C C. The Gates to enter the Barn with Cars, loaded with Corn in Sheaf.

D D. The Walls between the Bays, and threſhing Floor, to riſe as high as the Floors of the Bays.

E. A Crane is to be erected, for ſuſpending a Beam and Scales, for weighing off the threſhed Corn; and it is placed there, as being on the right Hand of the Threſher, and therefore out of the way of his Flail.

Explanation of the Inſide.

A A. The Floors of the Bays, ſhewing the ends of the Joice, which are to be ſix Feet from the Ground; and covered with Boards well jointed.

B. The threſhing Floor; to be made of what Materials may be choſen; But Oak Plank will be beſt.

C C. Houſes for horned Cattle, under the Bays.

D D. Curtains which are to be drawn, when one Kind of Corn may be in one Bay, and another Kind in the other, to prevent the one Kind of Grain, which may be threſhing, flying amongſt the other; and alſo to keep the Wind from the Threſhers, in ſtormy or cold Weather; otherwiſe the Barn will be very cold, when the Quantity of Corn in either, or both the Bays ſhall be below the Verge of the Roof. Theſe Curtains are to be made of coarſe Conaught ſacking, which may be bought for 5*d.* a Yard.

Explanation of one Front, or Side of the Barn.

A A A A A A. Are ſix large Windows, which are to be on each Side the Building, oppoſite to each other, in order to admit of a free Circulation of Air through the Corn; and they are to be neatly Weather-boarded, to throw off any beating Rains.

B. Is a circular Light, to admit Air, and to afford Light to the Threſhers, when the Weather will not admit of either of the Gates being open; or when the Maſter ſhall chooſe to lock up the Men, thereby to guard againſt Frauds.

C. Is the Gate, one of which, is to be on each Side or Front: the Doors to be cut horizontally, acroſs the Middle, to admit of the upper Hatches being open, when the lower may be ſhut: along the bottoms thin Iron ſhould be rivetted on, to prevent Rats gnawing them; and inſtead of a Rabbit cut in the Sill, I would ſpike down a Bar of three Inch Hackney Iron, for the Bottoms of the Doors to ſhut againſt.

D D. Are Stones, in the manner of Eve-ſtones, to be well hammered and jointed, and to project ſix Inches, to prevent Vermin creeping up, and under theſe Stones, the Walls on the outſide, all round, ſhould be neatly, and ſmoothly plaſtered, for two Feet downwards.

E E E E E E. The Front, ſhewing the Paſſages into the Houſes, under the Bays, for horned Cattle. Thoſe are to be on one ſide only.

Explanation of the Gable-Ends.

A. Is a large Window, which I would have carried as high as may be; by which it appears I would not hip the Gables, becauſe there will be little or nothing ſaved thereby; and by carrying them to the Ridge Pole, the Roof contains, by ſo much the more Corn.

B. Is the projecting Stone, to keep down Vermin.

General

General Explanations.

If any Perſon who may build this Barn, ſhall think that 20 Feet are not wide enough in the Floor for Thraſhing, and laying the thraſhed Corn on each Side; the croſs Walls D D in the Ground Plan, may be thrown, as far back, as the Lines F F in the Ground Plan, by which the thraſhed Corn, will lie commodiouſly under the Bays.

It doubtleſs will be obſerved, that the Building will be expenſive, from the Coins, Blocks and Arches, being all Hammered Stone, but the whole can be executed in plain Rough Work, which will make the Building very cheap.

The Walls under the Joice internally, ſhould be ſmoothly, and neatly plaſtered, for two Feet under the Joice, and between the Joice, neatly, and ſmoothly rendered, to prevent Vermin creeping up.

The Partition Walls D D in the Ground Plan, ſhould be ſmooth plaſtered alſo, and the Returns all round. The Inſide of the whole Barn, may, or may not be plaſtered, at the Diſcretion of the Owner.

From the Center of each Pier, under the Eve Stones, I would have a Joice paſs acroſs the Barn, by way of Ties, to prevent any Injury by Preſſure againſt the Piers. Not that much is to be feared from the Corn, preſſing outwards, becauſe the Heads of the Sheaves are always laid inwards, and conſequently, the Gravity inclines to the Centre.

From the Angles of the Returns, there are alſo to be a Joice for no other Purpoſe, but to carry the Curtains D D, as marked, in the Inſide.

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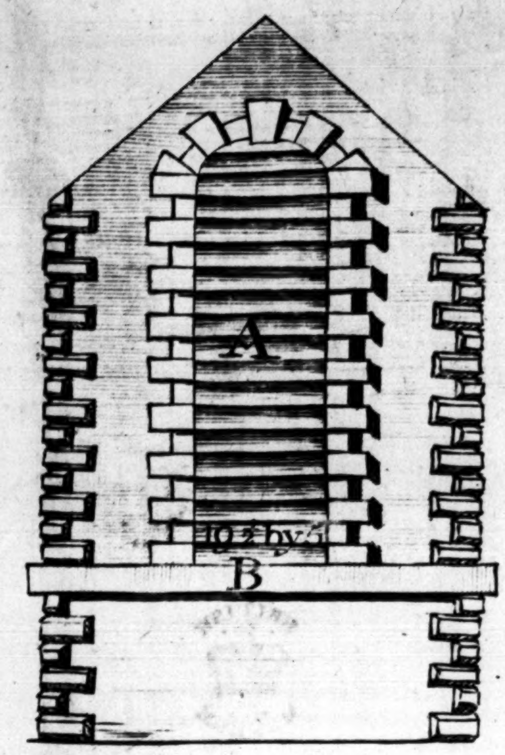

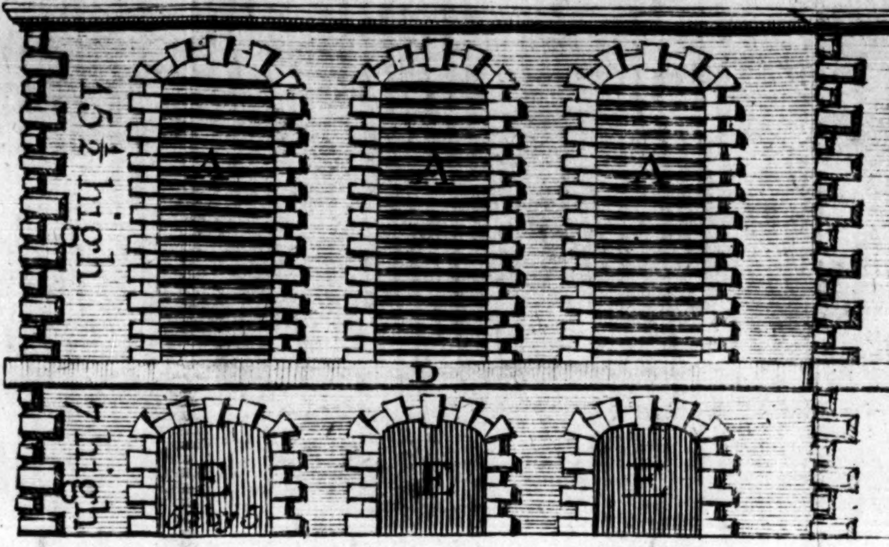

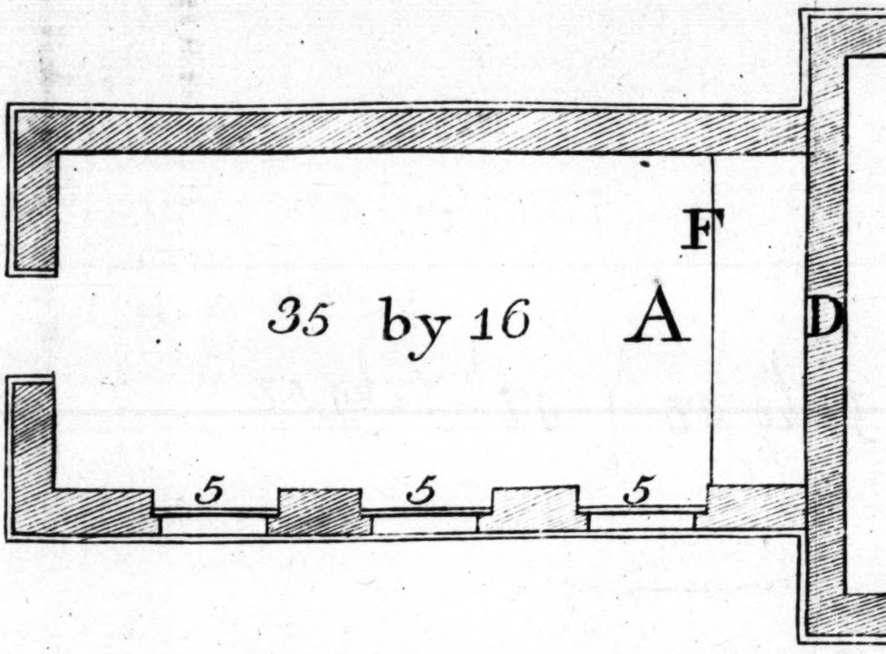

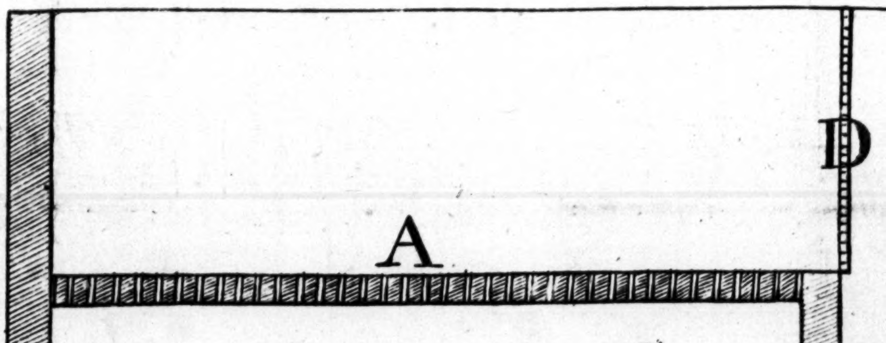

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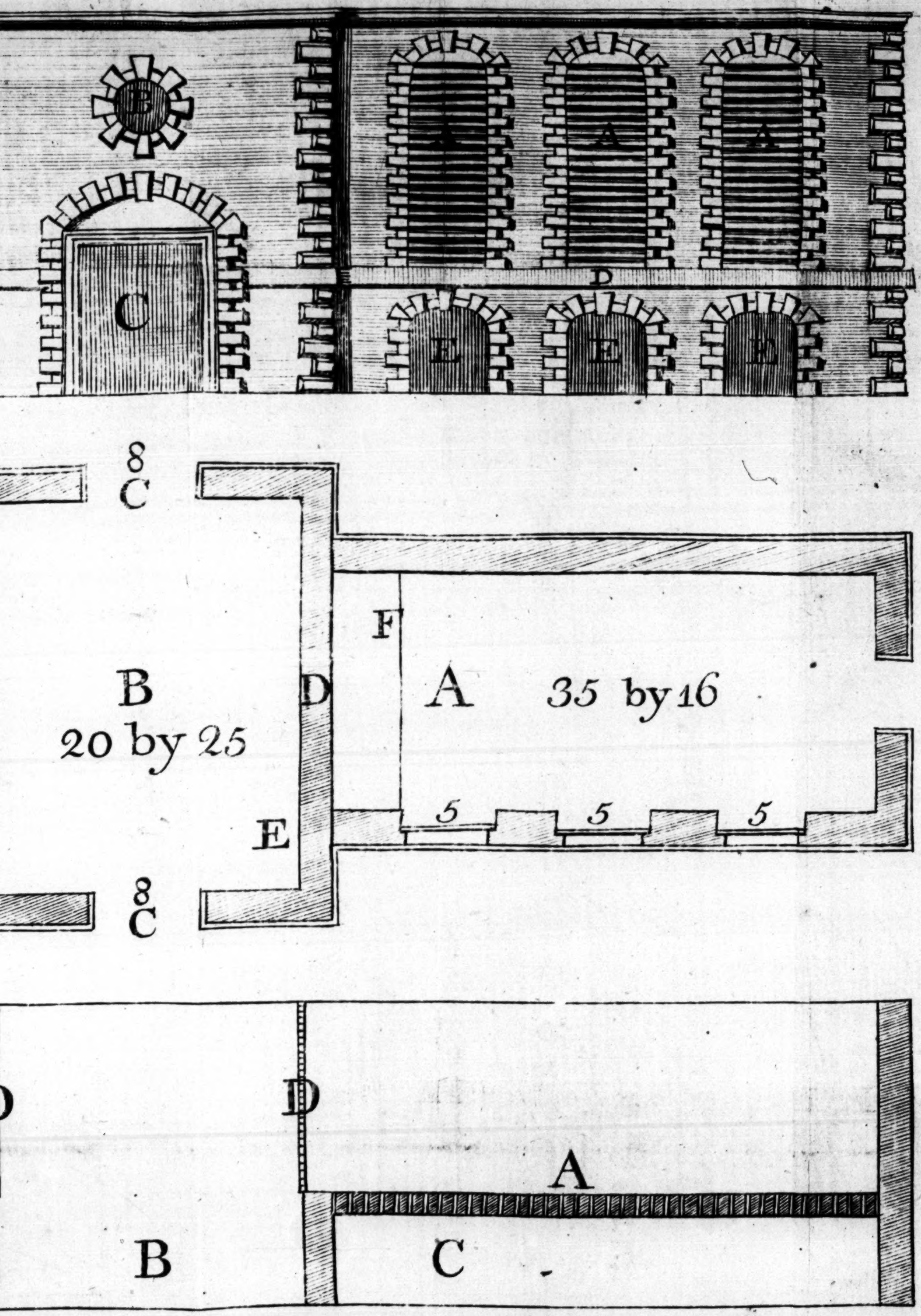

Engraved for Experiments in Agriculture of 1768.

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General Obſervations.

The Conveniencies and Savings to the Farmer in ſuch a Barn as this would be many; ſome of which I ſhall name.

In making his Sheaves, much Labour may be ſaved, for four or five of the common Sheaves may be put into one Band.

The Corn need not be ſtacked in the Field, but may be ſtucked, for a Day or two, and as faſt as it is ready, may be taken Home, and lodged in the Barn; and in proportion as that is executed, ſo much will be ſafe from the Danger of bad Weather, Vermin and Pilferers.

The Expence of putting the Corn into the Barn, will be a mere Trifle, in proportion to that incurred, by the Accuracy which is neceſſarily obſerved in the building of Ricks; and in this caſe, no Waſte at all is incurred, by unloading the Corn, becauſe the threſhing Floor receives every Grain.

In this Caſe, we ſhall not have from eight to a Dozen or fifteen fellows lying ſtretched upon the Mow, as we have upon a Rick, when any Accident happens, to interrupt the regular coming of the Carriages, as is often the Caſe.

None of that delightful work to the Men of making *Wangles*, (which approaches very near to the Phraſe of counting Straws) or thatching at high Wages; nor no pulling down Ricks, or carrying the Corn in upon Mens Shoulders.

No repairing of Thatch in, or after Stormy Weather; no Damage received in the Corn from great Rains, by bad thatching.

No breaking a Rick, or other Interruption to the Farmer, if he wants to thraſh a few Barrels, nor no waiting for a fine Day to put in a Rick.

No Vermin can get into the Bays of Corn; and if a Mouſe happens to come from the Field in a Sheaf, (which is by no Means ſo probable in Stucks, as in Stacks, for in the latter they ſwarm) as ſoon as it wants Water, it will make its way out at the Windows to ſeek it, whereas in Ricks, Vermin of all Kinds, have nothing to do, but approach the Verge, and there they lick up the drip of the falling Dews or Rain, and therefore never quit the Rick, but carry on their Generation, ſo that in a few Months the Rick will ſwarm with young and old Mice. Hence is is, that we ſee the Verge of Ricks, mangled in the Manner they are, when they have ſtood any long Time.

I could name many other Conveniences which would ariſe in the uſe of this Barn to the Farmer, and many other Inconveniences attendant on the preſent Practice; but at preſent, I ſhall conclude here with only obſerving,

That I apprehend, there are few Places in Ireland, where this Barn might not be built for £100. in a plain way.—Are there many Tenants who would not pay a Landlord five Pounds *per Annum* for building it? And I hope there are not many Landlords who would refuſe to execute ſuch a convenient Improvement for an induſtrious Tenant at 5 per Cent.

I am aware it may be objected, that by raiſing the Floors of the Bays ſo high as ſix Feet, much Stowage for Corn is loſt. I admit that; but then it is gained for the compleatly houſing Cattle, or for any other purpoſe; and if we were to raiſe the Floors only two Feet, that Space would be totally loſt, becauſe no Uſe could be made of it; and beſides that, Vermin would, from various Accidents, be more liable to get in, and to raiſe them three or four Feet, would render the Place underneath. very inconvenient for any Purpoſe.

The Barn, according to my Plan, I conceive, will contain at leaſt 300 Barrels of Wheat in Sheaf; and according to the ſize of the Farm, or quantity of Tillage thereon, the number of Barns may be increaſed, or the Size of one, if that be enough, diminiſhed.

Thus I have troubled the Society with my Ideas, of a new Barn, and if I ſhall have the Honour to continue longer in their Service, I propoſe next Year, to trouble them, with a plan for a Granary upon a new Conſtruction, for the Preſervation of thraſhed Corn; by giving it free Air, and frequent Motion, at ſo trifling an Expence, as moving almoſt any number of Barrels, at leaſt as many, as the Granary ſhall be made to contain, three or four times, for Sixpence.

FINIS.

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